7th QUARTERLY PROGRAMMATIC REPORT

July 10, 2000

Program Manager:	Spencer Shepherd	Phone:	415-778-0999 ext. 24
Project Manager:	Larry Nash	Quarter Ending:	6/30/00
CALFED Project #:	97-N01	Recipient Agreement:	8/28/98

DELIVERABLES

Name of Deliverable	Due Date	% of Work Complete	Date Deliverable Complete
Task 1 (NFWF approval on 10/8/98 with 1st revision approval on 8/4/99)			
Subtask 1 Draft subcontract	*	100	7/2/98
Final subcontract	*	100	8/3/98
Subtask II Draft EMP and QAAP	9/30/98	100	11/9/98
Subtask III Draft subcontract	9/30/98	100	11/9/98
Final subcontract	1 week after NFWF comments	100	1/12/99
Subtask IV Quarterly Report 1	1/20/99	100	1/10/99
Subtask IV Quarterly Report 2	4/12/99	100	4/12/99
Subtask IV Quarterly Report 3	7/12/99	100	7/12/99
Subtask IV Quarterly Report 4	10/13/99	100	10/4/99
Subtask IV Quarterly Report 5	1/10/00	100	1/26/00
Subtask IV Quarterly Report 6	4/10/00	100	4/12/00
Subtask IV Quarterly Report 7	7/10/00	100	7/10/00
Subtask V Characterization Report	~~3/1/00~~ ~~8/1/00~~ 12/1/00	30	--
Task 2 (NFWF approval on 8/4/99)			
Subtask I Draft subcontract	*	100	6/23/99
Final subcontract	*	100	4/12/00

DELIVERABLES

Name of Deliverable	Due Date	% of Work Complete	Date Deliverable Complete
Subtask VI Draft Priority Target List/Data Report	11/30/99	100	
Subtasks VII and VIII Draft PEAP and Implementation Plan	12/23/99	100	12/23/99
Subtask IX Outreach Materials	various	30	7/01/01
Subtask X Quarterly Report 5	1/10/00	100	1/26/00
Subtask X Quarterly Report 6	4/10/00	100	4/12/00
Subtask X Quarterly Report 7	7/10/00	100	7/10/00
Subtask XI Evaluation Report	11/30/00	0	--
Final Evaluation Report	11/17/01	0	--
Task 4 (NFWF approval on 10/8/98 with 1st revision approval on 8/4/99			
Subtask I Final subcontract	*	100	8/3/98
Subtask II Prepare scope for Arcade Creek Watershed	~~4/1/99~~ ~~11/1/99~~ ~~12/1/99~~ 7/1/00	100	7/10/00
Subtask III Prepare scope for PERA	~~4/1/99~~ ~~12/1/99~~ 7/1/00	100	7/10/00

1. Narrative Description of Activities Performed During the Quarter

TASK ORDER 1: Approval and NTP with Task Order 1 was received from NFWF on 10/8/98

APRIL

- Prepared 6th Programmatic Quarterly Report.
- Conducted 5th storm monitoring event.
- Completed 3rd whole effluent toxicity (WET) and in-situ toxicity monitoring event.

MAY

- CALFED/NFWF approved subcontract with Kathleen Russick to take on role as lead project investigator.
- Conducted 10th dry monitoring event. This is the final monitoring event for this phase of the study.

JUNE

- Completed data input and assessment of 3rd WET and in-situ toxicity monitoring event (which occurred in 4/00). Prepared and submitted draft report of toxicity testing for internal review.
- Held meetings with field staff to review monitoring conducted during the study and to pull together all documentation associated with monitoring (e.g., field notes, chain of custody forms).

TASK ORDER 2: See attached Quarterly Report from Deen and Black

TASK ORDER 4: Approval and NTP with Task Order 1 was received from NFWF on 10/8/98.

MAY & JUNE

- Prepared bioassessment scope of work to be included in the report "Tier 2 Probabilistic Ecological Risk Assessment on Arcade Creek" which is being sent separately to CALFED/NFWF simultaneous to this programmatic quarterly status report.

2. Problems and Delays Encountered

TASK ORDER 1:

- A subcontract with Kathleen Russick to act as lead project investigator for Task Orders 1 and 4 was approved by CALFED/NFWF. Ms. Russick has been retained at the lead

project investigator, replacing John Tomko who resigned in January 2000. Ms. Russick initiated work under this subcontract in April 2000. This has lead to an extension of the due date for the Characterization Report which is accounted for in the above Deliverables table. Monitoring under this task continued.

- Candidate locations for the high pesticide use sites were not readily found. Therefore, much fewer samples were collected at high pesticide use sites.

TASK ORDER 4:

- A subcontract with Kathleen Russick to manage and help conduct Tasks 1 and 4 was approved by CALFED/NFWF. Ms. Russick initiated work under this contract in May 2000. Since then, she has prepared the remaining components required to complete the work product, "Tier 2 Probabilistic Ecological Risk Assessment on Arcade Creek."

3. Other Issues or Comments

- Smile, be happy.

4. Project Expenses for Each of the Next Three Months

Task Order 1

Month 1: $5,100; Month 2: $15,800; Month 3: $10,800

Task Order 2

Month 1: $9,950; Month 2: $9,950; Month 3: $9,950

Assumes subtasks II – XIII are complete; charges to subtask IX (Implement PEAP) occur evenly over last nine months of 2000; and charges to subtask X (Project Management) occur evenly over last nine months of 2000.

Task Order 4

Month 1: $1,275; Month 2: $0; Month 3: $0

Assumes Task Order 4 will be completed in July 2000 with the submittal of the final report, "Tier 2 Probabilistic Ecological Risk Assessment on Arcade Creek."

7th Quarter Budget--April - June 2000

Total Project Estimated Completion Date: 2.5 years

		(Quarterly Budget--4/00- 6/00)								(FY '00 Budget)					(Total Budget)				
		Budget	Accrued Expenditures	Major Consultant expenditures	Sierra expenditures	AquaSci expenditures	Materials expenditures	Variance	**	Budget	Accrued Expenditures	Last Q Total Accrued	Remaining Balance	**	Total Budget	1999 Accrued	Tot. Accrued Expenditures	Balance to Complete	**
Task 1: Water Quality Monitoring - 1.5 years		$34,800	$14,263	$2,678	$3,585	$8,000	$0	$20,538		$79,204	$31,835	$17,572	$47,370		$184,000	$112,896	$144,731	$39,269	
Schedule: FY '99 through FY '00																			
Percent Work Complete for Task 1:	79%																		
1.I.	Execute Tomko Contract	0	0					0		0	0	0	0		0	0	0	0	
1.II.	EMP and QAPP Preparation	0	0					0		-198	0	0	-198		4,000	4,198	4,198	-198	
1.III	Execute AquaScience Contract	0	0					0		0	0	0	0		0	0	0	0	
1.IV.A.	Monthly River Sampling	0	0	0	0			0	*	-1,194	500	500	-1,694		2,000	3,194	3,694	-1,694	
1.IV.B.	Storm Runoff Sampling	1500	1,160	0	1,160			340		-451	1,600	440	-2,051		2,000	2,451	4,051	-2,051	
1.IV.C.	Monthly Runoff Sampling	1500	1,265	0	1,265			235		7,993	2,877	1,612	5,116		26,000	18,007	20,884	5,116	
1.IV.D	Rainfall Sampling	0	0	0	0			0	*	3,137	0	0	3,137		5,000	1,863	1,863	3,137	
1.IV.E.	Arcade Creek Sampling	1200	1,160	0	1,160			40		16,549	8,180	7,020	8,369		56,000	39,451	47,631	8,369	
1.IV.F	High-Use Site Sampling	0	0	0				0	*	3,430	0	0	3,430		4,000	670	670	3,330	
1.IV.G.	WET Tests	8500	4,000	0		4,000		4,500		12,500	8,000	4,000	4,500		20,000	6,000	14,000	6,000	
1.IV.H	Flow Through Bioassay	8500	4,000	0		4,000		4,500		12,500	8,000	4,000	4,500		15,000	4,150	12,150	2,850	
1.V.	PM and Reporting	13600	2,678	2,678				10,923		24,938	2,678	0	22,261		50,000	32,912	35,590	14,411	
Task 2: Education and Outreach Plan - 2.3 years		$49,127	$46,044	$46,044	$0	$0	$0	$3,083		$397,267	$98,948	$0	$298,318		$459,500	$22,919	$121,867	$337,633	
Schedule: FY '99 through FY '02																			
Percent Work Complete for Task 2:	27%																		
(Work began September 1, 1999)																			
2.I.	Execute Dean and Black Contract	0	0	0				0		0	0	0	0		0	0	0	0	
2.II.	Review/Evaluate Existing Data	0	0	0				0		4,370	3,272	3,272	1,098		5,120	750	4,022	1,098	
2.III.	Analyze Data/Create Workplan	1,809	0	0				1,809		1,696	1,155	1,155	541		4,446	2,750	3,905	541	
2.IV.	Identify Other Users	0	0	0				0		3,743	2,204	2,204	1,539		4,605	863	3,067	1,539	
2.V.	Analyze Use	1,704	0	0				1,704		3,711	770	770	2,941		3,711	0	770	2,941	
2.VI.	Develop Priority List	2,080	0	0				2,080		2,961	1,630	1,630	1,331		3,711	750	2,380	1,331	
2.VII.	Design PEAP	6,623	0	0				6,623		3,971	0	0	3,971		10,593	6,623	6,623	3,971	
2.VIII.	Prepare Implementation Plan	4,811	0	0				4,811		1,324	0	0	1,324		4,811	3,488	3,488	1,324	
2.IX.	Implement the PEAP	27,300	41,963	41,963				-14,663		344,003	77,983	36,020	266,020		344,253	250	78,233	266,020	
2.X.	Project Management	2,550	3,956	3,956				-1,406		15,492	11,809	7,853	3,683		34,855	7,446	19,255	15,600	
2.XI.	Prepare Evaluation Reports	0	125	125				-125		9,247	125	0	9,122		23,776	0	125	23,651	
Direct Salary and Benefits		2,250	0	0				2,250		6,750	0	0	6,750		19,619	0	0	19,619	
Task 4: Evaluation of Effects -1.0 year		$4,233	$3,060	$3,060	$0	$0	$0	$1,173		$4,233	$3,060	$2,173	$1,173		$20,000	$15,805	$18,865	$1,135	
Schedule: FY '99																			
Percent Work Complete for Task 4:	94%																		
4.I.	Execute Tomko Contract	0								0	0	0			0		0	0	
4.II.	SOW for Arcade Creek model	2,430	1,190	1,190				1,240		2,430	1,190	0	1,240		10,000	7,570	8,760	1,240	
4.III	SOW for Ecological Risk Assessment	1,803	1,870	1,870				-67		1,803	1,870	0	-67		10,000	8,235	10,105	-105	
Total:		**$88,160**	**$63,367**	**$51,782**	**$3,585**	**$8,000**	**$0**	**$24,793**		**$480,704**	**$133,843**	**$19,745**	**$346,861**		**$663,500**		**$285,463**	**$378,037**	

Notations *** :** Monthly river sampling, rainfall sampling, and high-use pesticide site sampling expenditures accounted for under Storm Runoff, Monthly Runoff, and Arcade Creek Sampling subtask expenditures.

QUARTERLY PROGRAMMATIC REPORT

Program Manager	Spencer Shepherd	Phone #	415-778-0999 x24
Project Manager	Meghan Mazzoni	Phone #	415-281-0432
CALFED Project #	97-N02		
Quarter Ending	June 30, 2000		

Deliverables

NOTE: The 97-N02 agreement was not fully executed until February 10, 1999.

Deliverable	Due Date	% Complete	Date Deliverable Complete
Task 1: Administrative Costs – Sacramento River Acq.			
Subtask 1: Salaries/Benefits/Overhead		approx. 18% of budget*	
* FWS and WCB need to submit documentation of overhead expenses			
Subtask 2: Services		approx. 41% of budget	
Deliverable 1: Appraisal cover pages			Ongoing
Deliverable 2: Survey cover pages			Ongoing
Deliverable 3: Haz Mat summaries			Ongoing
Deliverable 4: Escrow closing statements			Ongoing
Deliverable 5: Baseline reports			N/A to date
Deliverable 6: Draft and final subcontracts			Ongoing
Deliverable 7: FWS letter of assurances			Submitted for Kaiser and Koehnen land
Task 2A: Acquisition of Kaiser Property		**100%**	**2/26/99**
Deliverable 1: Recorded Deed			9/28/99
Task 2B: Acquisition of Koehnen Property		**100%**	**8/12/99**
Deliverable 1: Recorded Deed			9/28/99
Deliverable 2: Survey			pending
Task 2C: Acquisition of RX Ranch Property		**100%**	**2/29/00**
Deliverable 1: Recorded Deed			pending

Narrative

Activities Performed:

Task 1: Administrative Costs – Sacramento River Acquisition

Negotiation efforts, due diligence duties and project management pertinent to the acquisition of the RX Ranch, Gunn Hill, Sunset Ranch, JG Bratton, and Claire Kaplan Trust properties plus 12 other Sacramento River Floodplain properties currently in negotiation were performed by the Project Director and members of the senior staff.

The Koehnen property in Butte County (632 acres planted in walnuts and almonds, plus riparian) closed escrow in August with title vested in the US Fish & Wildlife Service (FWS). The Nature Conservancy (TNC) manages the property under a Cooperative Land Management Agreement (CLMA) with FWS. TNC negotiated a lease back with the Koehnen family for the agricultural portion of the property for the crop-years 2000 and beyond. Net lease income will be used to partially offset the cost of restoration as orchard production decreases and/or trees die as a result of age, disease or flood damage. FWS will pay in lieu taxes to Butte County. TNC and the Koehnen family will pay possessory interest taxes.

The Gunn Hill property in Glenn County (54 acres planted to walnuts, 11 acres riparian), And the RX Ranch property, also in Glenn County (251 acres planted to almonds and walnuts) closed during the quarter. TNC submitted a Task Order for RX Ranch acquisition funds during the quarter and will submit an additional Task Order for Gunn Hill acquisition funds prior to the end of July 2000.

TNC is currently negotiating with the owners of the Sunset Ranch, JG Bratton and Claire Kaplan Trust properties, all within close proximity of the Gunn Hill, RX Ranch, Kaiser, and Koehnen properties, with escrow expected to close on Sunset Ranch in July 2000, and on Bratton and/or Kaplan following harvest in October or November 2000.

All of these properties taken together fall within the Chico Landing Sub-Reach between Hamilton City and Ord Bend. Gunn Hill, Bratton, Kaplan, RX Ranch, Sunset Ranch and Kaiser are integral elements of a coordinated floodplain management strategy that will address ecosystem restoration in the context of Hamilton City's need for flood protection. The US Army Corps of Engineers is currently conducting a feasibility study that envisions relocating the "J Levee" that protects Hamilton City and currently disconnects Gunn Hill, Kaplan, and Bratton floodplain from the Sacramento River. Upon relocation of the levee these properties will provide increased floodplain capacity and will be restored to their natural function as floodplain riparian habitat.

Task 2A: Acquisition of Kaiser property

Baseline assessment and preparation of a management plan for the Kaiser property (approximately 666 acres) as an addition to the U.S. Fish & Wildlife Service Sacramento River National Wildlife Refuge are ongoing. Perpetual management will be provided by the FWS as part of its normal refuge operations consistent with CALFED objectives and the management plan. TNC currently manages the Kaiser property under a CLMA with FWS. Approximately 130 irrigated acres have been leased to Loesch Bros. for row crop farming (corn) for crop year 1999; additional acres will be leased for crop year 2000 depending upon the success of current weed control activities on the property. The net income will be used to support restoration activities on refuge lands including those purchased with CALFED funds.

Task 2B: Acquisition of the Koehnen property

The Koehnen property (approximately 632 acres) closed escrow on or about August 9, 1999 with title vesting in the United States. Baseline assessment and preparation of a management plan for the Koehnen property as an addition to the U.S. Fish & Wildlife Service Sacramento

River National Wildlife Refuge are ongoing. Perpetual management will be provided by the FWS as part of its normal refuge operations consistent with CALFED objectives and the management plan. TNC currently manages the Koehnen property under a CLMA with FWS. Approximately 590 acres of almonds and walnuts will be leased to the Koehnen family for crop years 2000 and beyond. The net income will be used to support restoration activities on refuge lands including those purchased with CALFED funds.

Task 2C: Acquisition of the RX Ranch property

The Nature Conservancy (TNC) signed an option with Ted and Craig Dress, dba RX Ranch, to purchase the RX Ranch on the west side of the Sacramento River south of Hamilton City at RM 194.5. Prior to opening negotiations with Ted and Craig Dress, TNC, the United States Fish and Wildlife Service (FWS), the Wildlife Conservation Board (WCB) and the California Department of Fish and Game (DFG) reached consensus agreement to pursue acquisition of the RX Ranch.

The RX Ranch Tract is within the "inner-river zone", also known as the "150 year meander zone", as those terms are defined by the SB 1086 Draft Restoration Handbook (May 1998). Acquisition of the RX Ranch Tract is essential to recreating a continuous riparian corridor along the river and reconnecting the river to its traditional floodplain.

Additionally, the RX Ranch, Gunn Hill Farms and the Kaplan tract (see Task 2D, below) are within an area that was traditionally protected from direct impact from flood waters by a privately maintained levee (commonly referred to as the "J Levee"). Originally, the J Levee began north of Hamilton City and ended just upstream of the RX Ranch which, at that time, included additional acreage north of the current tract. Several years ago the California Department of Fish and Game (DFG) purchased the northern portion of the RX Ranch, degraded the J Levee and constructed a weir across the new northern boundary of the RX Ranch. DFG hoped to reduce potential flood damage to the RX and adjoining properties (Kaplan, Bratton, Lewis, Vershagian, and Billou), however, the weir failed in a subsequent event and the RX Ranch and adjoining properties are now inadequately protected as a result of continued, persistent failure of the J Levee.

TNC is currently working with Glenn County, the Hamilton City Community Services District, and adjoining landowners to acquire sufficient land in addition to the RX Ranch to re-establish a riparian corridor, permit limited river meander, and provide land on which to relocate the J Levee. Acquisition of the RX Ranch is critical to this community based effort restore a functioning ecosystem and insure public safety by relocating and rebuilding the J Levee on higher ground away from the direct impact of high stage, high velocity flood flows. Glenn County and adjoining landowners actively support acquisition of the RX Ranch for conservation and the nonstructural flood control benefit of increased floodplain capacity.

Task 2D: Acquisition of the Gunn Hill property

The Nature Conservancy (TNC) closed an option during the quarter with Gunnar and Hilli Sevelius, dba Gunn Hill Farms, to purchase the Gunn Hill property on the west side of the Sacramento River south of Hamilton City at RM 197. Prior to opening negotiations with Gunnar and Hilli Sevelius, TNC, the United States Fish and Wildlife Service (FWS), the Wildlife

Conservation Board (WCB) and the California Department of Fish and Game (DFG) reached consensus agreement to pursue acquisition of the Gunn Hill Farms.

Examination of the Gunn Hill Farms title report revealed a right of first refusal in favor of American Almond Growers, predecessor to the Claire Kaplan Trust, owner of an adjoining parcel. TNC negotiated with American Almond to obtain a release of its right of first refusal and to obtain an option on the Kaplan orchard adjoining Gunn Hill. The Wildlife Conservation Board/California Department of Fish and Game favor allocation of WCB/DFG funds under CalFed 97-N02 and/or additional funds to purchase the Gunn Hill and Kaplan parcels for eventual inclusion in DFG's Pine Creek Unit. WCB has committed additional funding to complete the Kaplan acquisition in the event that CalFed 97-N02 capital funds remain after purchase of Gunn Hill and RX Ranch (see Proposed Task 2D, below).

TNC will submit Task Order 2D within the next month and request reimbursement for the Gunn Hill acquisition.

The Gunn Hill and Kaplan acquisitions will link the DFG Pine Creek Unit to the RX Ranch tract (see Proposed Task 2D, below) and the USFWS Kaiser tract south of RX (acquired pursuant to Task 2A) to create an 1,800 acre unfragmented riparian corridor on the west bank of the Sacramento River below Hamilton City. Glenn County and adjoining landowners actively support acquisition of the RX Ranch for conservation and the nonstructural flood control benefit of increased floodplain capacity and the opportunity these acquisitions present to relocate the J Levee (see RX Ranch above) and accomplish ecosystem restoration to provide additional flood plain capacity and increased public safety.

Projected Expenses for Next Three Months:

Following is an estimate of costs for the next three months (April – June, 2000):

Month 1 $480,000 Month 2 30,000 Month 3 $30,000
Total for Quarter: $540,000

Title **Sacramento River Floodplain Acquisition and Riparian Forest Restoration** Budget year: 00-Sep-30

Applicant: The Nature Conservancy. Statement Quarter: Jun-00

CALFED Project Number: 97-N02

Total Estimated Cost of Pha: $9,879,800

Funding from Federal Bay-Delta Account

Costs contributed by The Nature Conservancy

Salaries/Benefits/Overhead 2,351.08

Phase I schedule 3 years

Total Project Estimated Con 3 years

		PHASE I (Quarterly Budget)				PHASE I (FY '00 Budget)				PHASE I (Three Year Budget)			
		Budget	Accrued Expenditure	Variance	**	Budget	Accrued Expenditures	Remaining Balance	**	Budget	Accrued Expenditures	Balance to Complete	**
Task 1:	Administrative Costs - Sacramento River Acquisition												
	Schedule: FY '99 through FY '01												
	Percent Budget Complete for Task 1: 27%												
Subtask 1	Salaries, Benefits, Overhead	15,000	11,583	3,417		465,160	81,581	383,579		465,160	81,581	383,579	**FN1.**
Subtask 2	Services	20,000	16,261	3,739		310,000	127,075	182,925		310,000	127,075	182,925	
Task 2:	Acquisition of Properties	500,000	459,199	40,801	*	8,704,640	8,010,612	694,028		8,704,640	8,010,612	694,028	**FN2.**
	Schedule: FY '99 through FY '01												
	Percent Budget Complete for Task 1: 92 %												
2A	Acquistion of Kaiser Property	Acquisition completed					In Task Total				In Task Total		
2B	Acquistion of Koehnen Property	Acquisition completed											
2C	Acquisition of RX Ranch Property	Acquisition completed 2/29/00											
2D	Acquisition of Gunn Hill Property	Task Order 2D Pending											
Task 3:	Start-up Stewardship: Development of Monitoring & Management Plans	Task Order 3 Pending				Task Order Pending				400,000	0	400,000	**FN3.**
	Schedule: FY '99 through FY '01												
	Percent Work Complete for Task 1: 0%												
Phase I Total:		$535,000	$487,043	$47,957	**	$9,479,800	$8,219,268	########	**	$9,879,800	$8,219,268	#########	

We budget to the Sub-task level only if they are active during the Quarter in question. If a SUBTASK is complete, the SUBTASK cost rolls-up into the Task level.

**** Explanation of Variance in Budget :**

** Have requested that FWS and WCB send in summary of expenses for Calfed reimbursement. No requests yet for reimbursement by FWS or WCB.

FN1 $200,000 originally budgeted for WCB/FWS staff/overhead

FN2 For capital costs only

FN3 $400,000 for FWS/WCB per MOU. Consensus agreement to request different budget allocation in Task Order 3.

QUARTERLY PROGRAMMATIC REPORT

Program Manager	Spencer Shepherd	Phone #415-778-0999 x24
Project Manager	Meghan Mazzoni	Phone #415-281-0432
Calfed Project #	97-N03	
Quarter Ending	June 30, 2000	

Deliverables

NOTE: The 97-N03 agreement was not fully executed until December 8, 1998.

Deliverable	Due Date	% Complete	Date Deliverable Complete
Task 1: Restoration of 200 acres			
Subtask 1: Site analysis and planning		Subtask 1 - 100%	
Deliverable 1: Site Restoration Plan			8/3/99
Deliverable 2: Draft and final subcontracts			
Subtask 2: Site preparation and planting			
Deliverable 1: Site tour, as necessary	11/30/99		
Deliverable 2: Draft and final subcontracts	11/30/01		ongoing
Subtask 3: Restoration of 84 acres (Flynn Unit)			
Task 2: Monitoring			
Deliverable 1: Draft and final monitoring plan	6/30/02		
Subtask 1: Measure Plant Survival			
Deliverable 1: Final restoration report	12/1/01		
Subtask 2: Evaluate Plant Design			
Deliverable 1: Annual report for landbird monitoring	1/31/00,01,02		4/11/00
Deliverable 2: Evaluation of recruitment potential	6/30/02		
Deliverable 3: Evaluation of site selection and plant design	6/30/02		
Deliverable 4: Draft and final subcontract	6/30/02		

Subtask 3: Measure key connections between river and floodplain

Deliverable 1: Response of nutrient cycling to restoration report
6/30/02

Deliverable 2: Response of groundwater quality to restoration report
6/30/02

Deliverable 3: Soil development following restoration report
6/30/02

Deliverable 4: Draft and final subcontract
6/30/02

Narrative

Task 1: Restoration of 200 acres of riparian habitat

The Nature Conservancy (TNC) and the U.S. Fish and Wildlife Service (FWS) are working together to restore 200 acres of riparian forest on River Vista Unit site VII (River Vista VII). River Vista VII is part of the SB 1086 Conservation Area of the Sacramento River and is located on a flood-prone agricultural unit contiguous with 670 acres of previously restored riparian habitat. The purpose of restoration is to address environmental stressors by increasing the extent of native riparian forest communities along the river. Benefits of riparian habitat restoration include:

1. Increased extent of riparian forest communities to improve vegetative diversity while reducing habitat fragmentation. (Monitored by TNC under Task 2, subtask 1.)
2. Provides structurally complex habitat for neo-tropical migratory birds. River Vista VII provides migration stopover and breeding habitat. This project will enhance migratory corridor and productivity benefits and will provide superior habitat and foraging opportunities. (Monitored by PRBO under Task 2, subtask 2.)
3. Provides shaded riverine aquatic habitat for anadromous and resident fish species to enhance instream habitat. (To be monitored by CSUC under Task 2, subtask 3.)
4. Provides opportunities for local growers, and local irrigation and farm equipment companies. Farmers are valuable assets because they provide skilled restoration work as well as a commitment to and pride in the land. Restoration of riparian forests also improves adjacent farms by providing a filter strip in which flood debris and sediments are trapped. This reduces insurance claims for and dollars spent on flood-related damages. Riparian filter strips also improve water quality by reducing agricultural inputs to the river, and trapping fine sediments improves instream habitat by reducing channel aggradation. (Soil development and groundwater quality to be monitored by CSUC under Task 2, subtask 3.)

Subtask 1: Site analysis and planning

Complete

Subtask 2: Site preparation, planting and maintenance

The Nature Conservancy's Sacramento River Project applies agricultural techniques to restoration planting. Thus, restoration is conducted much like orchard farming. Local farmers and contractors are hired for plant propagation, irrigation design and installation, and site preparation, planting and maintenance.

April 1, 2000 – June 30,2000

Repairs were made to the irrigation system and second year maintenance began on the site. The plants are being irrigated by a drip system and the weeds are being mowed in the rows and sprayed with RoundUp in the strips.

Subtask 3: Restoration of 84 acres (Flynn Unit)

April 1, 2000 – June 30,2000

An additional subtask was added to Task 1 to plant 84 acres at the Flynn Unit of the Sacramento River National Wildlife Refuge. This planting is adjacent to the 10-acre restoration site funded by the Calfed grant 97-N04. During the last quarter site preparation and planting subcontracts were drafted and restoration planting began. Site preparation included disking and leveling the site for flood irrigation, pulling up furrows, installing the irrigation system and laying out the planting design according to the restoration plan. Container and cutting plant stock was planted by June 2, 2000. Irrigation and weed-control are underway and will continue through the growing season. The 30-day monitoring to determine total acres planted and to establish baseline data is scheduled for June 30, 2000.

Task 2: Monitoring

Monitoring measures TNC's and it's subcontractors' success at meeting the objectives of the 97-N03 Recipient Agreement. It also provides feedback for corrective action, and suggests improvements to the planting design. Monitoring on the Project Site will accomplish three objectives: 1) measure plant survival following revegetation to ensure contract compliance and adherence to the restoration plan developed for the site, 2) measure wildlife response to the plant design and 3) measure key connections between the river and the floodplain. All proposed monitoring subtasks evaluate parameters that support Calfed objectives.

The Nature Conservancy adds value to project monitoring by linking data collection and analysis across multiple projects to provide a comprehensive regional view. Calfed 97-N03 funds will be spent on River Vista VII and at appropriate reference sites only, but will also help complete long-term, larger scale monitoring programs. For example, migratory songbirds provide an indicator of restoration success at River Vista VII, and when added to data collected at additional TNC project sites contribute to assessments of ecosystem health for the Central Valley.

A monitoring plan was drafted collaboratively with TNC staff, Calfed representatives, and California State University, Chico ecology and natural sciences faculty. The draft monitoring plan and Task Order for task two were submitted for review and subsequently signed on August 20, 1999. The monitoring plan includes three subtasks.

Subtask 1: Determine plant survival

Plant density, species composition, growth and mortality are measured regularly to ensure that planting objectives are met. Plant survival is estimated 30 days following initial planting to determine transplant survival. This provides baseline information to evaluate plant performance and determines if plants are needed for fall replanting. Subsequent monitoring is done annually in the fall to evaluate field management practices.

April 1, 2000 – June 30,2000

The 30-day monitoring to determine total acres planted and to establish baseline data is scheduled for June 30, 2000.

Subtask 2: Evaluate plant design

The Nature Conservancy's restoration plan is designed to establish a diverse, healthy riparian forest based on the Project Site's unique physical factors and the elements needed by target species. Four parameters are measured to evaluate how well the restoration plan achieves the restoration objectives for target species use: 1) wildlife use of the revegetation site, 2) recruitment potential for aquatic elements, 3) plant response to the site's physical setting and 4) plant response to flooding. Offsite monitoring is used to establish reference conditions. Under the Task Order, monitoring for wildlife use is done each year and recruitment potential for woody debris and plant responses to environmental conditions will be done near the end of the grant period allowing plants on the restoration site time to show effects from the site conditions. Point Reyes Bird Observatory, an internationally recognized leader in songbird conservation and co-author of the nationwide Partners in Flight program, conducts wildlife use monitoring on TNC's restoration projects.

April 1, 2000 – June 30,2000

Point Reyes Bird Observatory (PRBO) biologists have been conducting point counts and spot mapping at both River Vista and the Flynn units of the Sacramento River National Wildlife Refuge since April 15, 2000. Point count transects were repeatedly sampled three times through revegetation fields and in old forest sites at the Flynn unit (including 97-N03 & 97-N04 sites) and at River Vista (97-N03). Point counts are complete for the breeding season. Spot mapping is continuing within the older restoration sites and in the adjacent natural forest. Overall bird use of the revegetation and reference sites appears lower than average this year. Vegetation structure data will be collected over the next three months for all point count stations to assist developing habitat requirements for selected species.

Subtask 3: Demonstrate riparian/riverine interactions

The Nature Conservancy will measure indicators for assessing nutrient budgets, nutrient cycling, and transport of organic materials. These ecological attributes function on the Project Site and contribute to a healthy ecosystem. This monitoring demonstrates the link between quality riparian forest and improved instream productivity.

A benefit resulting from planning the monitoring for River Vista VII is the continuing collaboration between Sacramento River Project staff and California State University, Chico.

April 1, 2000 – June 30,2000

The River Vista site (97-N03) has been mapped, sample transects established and pilot sampling has been conducted for nutrient cycling and soil development monitoring. Carbon and nitrogen extraction methods have been adapted to this site and equipment calibration is underway. Soil sampling consists of triplicate subsamples to determine range of initial mineralized nitrogen content. Final mineralized nitrogen is determined from subsamples made from mixing soil samples of all points sampled within a site. Previous analyses have shown this as an efficient and accepted means for determining the variability in nitrogen mineralization rates at the site level. Sampling transects are eight points set 50m apart within each of three sites. Reconnaissance for additional reference sites is underway and expected to be complete in the next three months.

Following is an estimate of costs for the next three months (April - June 2000):

Month 1 $60,800 Month 2 $0 Month 3 $7,545 Total for Quarter $68,345

Title **Ecosystem and Natural Process Restoration on the Sacramento River:** Budget year: 00-Sep-30
Active Restoration of Riparian Forest

Applicant: The Nature Conservancy. Statement Quarter: Jun-00

CALFED Project Number: 97-N03

Total Estimated Cost of Phase I: $780,000
Funding from Federal Bay-Delta Accou 780,000

The Nature Conservancy project contribution to date:

Salary, Benefits and IDC	19,554
Other costs (eq. Printing)	617
TOTAL	20,171

Phase I schedule 3 years
Total Project Estimated Completion Date: 3 years

		PHASE I (Quarterly Budget)				PHASE I (FY '00 Budget)				PHASE I (Three Year Budget)			
		Budget	Accrued Expenditures	Variance		**Budget**	Accrued Expenditures	Remaining Balance		**Budget**	Accrued Expenditures	Balance to Complete	
Task 1:	Rest. of 200 Acres of Reparian Habitat												
	Schedule: FY '98 through FY '01												
	Percent Budget Complete for Task 1: 60%												
1a	Site analysis and planning	**0**	0	0		**6000**	3,882	2,118		**6000**	3,882	2,118	
1b	Site preparation and planting	**0**	0	0	*	**547500**	399,325	148,175	*	**547500**	399,325	148,175	
1c	Site preparation and planting	**20000**	18,378	1,622		**142500**	18,378	124,122	*	**142500**	18,378	124,122	
Task 2:	Percent Budget Complete for Task 1: 12%												
1a	Determine plant survival	**0**	0	0		**0**	0	0		**0**	0	0	
1b	Evaluate plant design	**0**	0	0		**10000**	0	10,000		**34000**	0	34,000	
1c	Demonstrate riparian interactions	**0**	0	0	*	**40000**	10,000	30,000		**50000**	10,000	40,000	
Phase I Total:		**$20,000**	**$18,378**	**$1,622**	*	**$746,000**	**$431,585**	**$314,415**	*	**$780,000**	**$431,585**	**$348,415**	

We budget to the Sub-task level only if they are active during the Quarter in question. If a SUBTASK is complete, the SUBTASK cost rolls-up into the Task level.

** Please explain significant variance.

**TNC anticipates that Task 1, Subtask 2 costs will be less than anticipated due to increased efficiencies and favorable restoration conditions.

CALFED approved a Task 1 addendum and budget adjustment between subtasks 2 and 3 to allow additional restoration next to the 97-N04 site with unanticipated 97-N03 cost-savings.

**Task Order 2 approved 8/23/99.

Note: TNC is not charging staff time to this award and Task 2 costs will be subcontract costs.

QUARTERLY PROGRAMMATIC REPORT

Program Manager	Spencer Shepherd	Phone #415-778-0999 x24
Project Manager	Meghan Mazzoni	Phone #415-281-0432
Calfed Project #	97-N04	
Quarter Ending	June 30, 2000	

Deliverables

Deliverable	Due Date	% Complete	Date Deliverable Complete
Task 1: Acquisition of 80 acres		**100%**	
Subtask 1: TNC Service contracts			
Deliverable 1: Appraisal cover page			1/8/99
Deliverable 2: Survey report cover page			1/8/99
Deliverable 3: USFWS Level I report summary			9/4/98
Deliverable 4: Escrow closing statements			1/8/99
Subtask 2: Phase I Assessment			
Deliverable 1: Phase I Assessment			11/13/98
Subtask 3: Capital costs			
Deliverable 1: Copy of recorded deed			1/8/99
Task 2: Restoration of 10 acres			
Subtask 1: Site analysis and planning			
Deliverable 1: Site restoration plan			3/6/00
Deliverable 2: Draft and final subcontracts			5/25/00
Subtask 2: Site preparation, planting, maintenance & monitoring			
Deliverable 1: Site tour, as necessary			
Deliverable 2: Draft and final subcontracts			
Deliverable 3: Annual report			
Deliverable 4: Draft and final monitoring plan			

Narrative

Task 1: Acquisition of 80 acres

On December 8, 1998 the acquisition of the Flynn property was completed with title vesting in the United States. The Nature Conservancy provided Calfed funds to the U.S. Fish and Wildlife Service for the purchase under the 97-N04 Recipient Agreement. The property consists of 94.55 acres and was added to the Vincent J. Flynn Unit of the Sacramento River

National Wildlife Refuge. The acquisition also included a levee located on the eastern boundary of the property and rights to an easement to maintain a levee on adjacent property.

Task 2: Restoration of 10 acres

During the last quarter site preparation and planting subcontracts were drafted and restoration planting began. Site preparation included disking and leveling the site for irrigation, installing the irrigation system and laying out the planting design according to the restoration plan. Container and cutting plant stock was planted by June 2, 2000. Irrigation and weed-control are underway and will continue through the growing season. The 30-day monitoring to determine total acres planted and to establish baseline data is scheduled for June 30, 2000.

Following is an estimate of costs for the next three months (July – September 2000):

Month 1 $9,500 Month 2 $100 Month 3 $100 Total for Quarter $9,700

Title **Ecosystem and Natural Process Restoration on the Sacramento River:**
A Meander Belt Implementation Project

Budget year: 00-Sep-30

Applican The Nature Conservancy.

Statement Quarter: Jun-00

CALFED Project Number: 97-N04

Total Estimated Cost of Phase I $898,700
Funding from Federal E 898,700

(In-Kind Services would be listed here if applicable- note: Detail of the service provide would be included.)

Phase I schedule 3 years

Total Project Estimated Compl 3 years

		PHASE I (Quarterly Budget)				PHASE I (FY '00 Budget)				PHASE I (Three Year Budget)			
		Budget	Accrued Expenditures	Variance	**	Budget	Accrued Expenditures	Remaining Balance	**	Budget	Accrued Expenditures	Balance to Complete	**
Task 1:	Acquisition of Flynn property		($155)		n1	$823,244	$823,089	$155		$823,244	$823,089	$155	
	Schedule: FY '98 through FY '99	**Task 100% Complete**											
Task 2:	10 ac restoration	24500	$5,031	$19,469		$75,456	$7,863	$67,593		75,456	7,863	67,593	**
	Schedule: FY'99 through FY'2001												
Phase I Total:		**$24,500**	**$5,031**	**$19,469**		**$898,700**	**$830,952**	**$67,748**		**$898,700**	**$830,952**	**$67,748**	

We budget to the Sub-task level only if they are active during the Quarter in question. If a SUBTASK is complete, the SUBTASK cost rolls-up into the Task level.

** Please explain significant variance.

** Implementation of Task Order 2 was delayed until Task Order 2 was approved by NFWF/Calfed on 2/1/00.
Task 1 and 2 budget revision approved in March 2000 as part of Invoice #4.

n1. Refund of closing costs. Invoice will be adjusted as necessary.

Quarterly Programmatic Report
No. 5

Program Manager: Spencer Shepherd **Phone:** (415) 778-0999 (x24)
Project Manager: Loren E. Clark
CALFED Project # 97-N05
Quarter Ending: July 10, 2000

Deliverables

	Name of Deliverable	Due Date [1]	% of Work Complete	Date Deliverable Complete
Task 1				
Subtask A	Development of Plan Objectives	April 1999	100%	October 1999
Subtask B	Watershed Assessment	December 1999	70%	Not Complete
Subtask C	Land Use Analysis	September 1999	60%	Not Complete
Subtask D	Conflict Identification	November 1999	0%	Not Complete
Subtask E	Prioritization of Restoration Projects	October 2000	0%	Not Complete

Narrative

1. Description of activities performed during the quarter, by task.
2. Problems and delays encountered by task.
3. Other issues of comments.
4. Please identify your projected expenses for each of the next three months in the following quarter to assist in the timing of State bond sales that fund this project.

Month 1: $7,750 Month 2: $15,500 Month 3: $25,000 Total for Quarter: $48,250

[1] The subtasks dates reflect a change in the schedule that adds 4 months to the completion of the work program. This change was authorized on October 29, 1999 by Spencer Shepherd of the National Fish and Wildlife Foundation

Narrative Explanations

Quarterly Activities

Five proposals for the preparation of the Ecosystem Restoration Plan were received and reviewed during the previous reporting period. As detailed in Quarterly Report No. 4, WRC Environmental was recommended by the TAC.

Much of the reporting period was devoted to negotiating a Work Scope and Fee Schedule with WRC Environmental. On May 22, the Placer County Board of Supervisors authorized a contract with WRC in the amount of $156,700. A contact was signed on June 26, 2000.

Christopher Schmidt, a new Associate Planner, was hired by the County and began work in late June. He has been assigned the responsibility of managing this contract and a Proposition 204 contract for the Dry Creek watershed in Western Placer County under the supervision of the Project Manager, Loren Clark. This staffing increase is anticipated to alleviate some of the constraints associated with the processing of the contract.

A project orientation meeting was held with WRC Environmental to review the work schedule and to define critical first steps. An informational letter from the County will be mailed to property owners within the watershed in late-July. The letter will provide an overview of planned work, goals, a request for cooperation in accessing stream corridors, and information on how the public can become involved in the process.

By mid-July, kick-off meetings between WRC Environmental and the CRMP and TAC, essentially Task A (Project Start-up), will have taken place. Formalizing the CRMP, TAC, County and contractor relationships and responsibilities is essential to accomplish program goals and objectives. Other Work Scope tasks will proceed shortly thereafter.

Problems and Delays – Finalization of the contract with WRC took longer than anticipated. However, with a contract now in place, work will begin immediately.

Other Issues or Comments – Expenditures made during this quarter involved staff time working with WRC to finalize the Scope of Services and contract. WRC will commence invoicing for its work during the next reporting period.

Title: Auburn Ravine/Coon Creek (CRMP) **3rd QUARTER FEDERAL FY 2000**

Applicant: Placer County

CALFED Project Number: 97-N05

Total Estimated Cost of Phase I:	$222,530
Funding from Federal Bay-Delta Accoun	$222,530
In-Kind Serivces This Quarter:	$ -
In-Kind Serivces To Date:	$4,015

Phase I Schedule	1 year
Total Project Estimated Completion Date:	1 year

	PHASE I (Quarterly Budget)			PHASE I (FY '00 Budget)			PHASE I (Three Year Budget)		
	Budget	**Accrued Expenditures**	**Variance**	**Budget**	**Accrued Expenditures**	**Remaining Balance**	**Budget**	**Accrued Expenditures**	**Balance to Complete**
Task 1: "Development of Plan Objectives"	$114	$114	$0	$570	$570	$0	$570	$570	$0
Schedule: FY '98 through FY '99									
Percent Work Complete for Task 1: **100%**									
Task 2: "Watersheds Assessment"	$0	$3,674	($3,674)	$0	$3,674	($3,674)	$84,893	$3,674	$81,219
Schedule: FY '98 through FY '99									
Percent Work Completed for Task 2: **60%**									
Task 3: "Land Use Analysis"	$0	$2,068	($2,068)	$0	$2,068	($2,068)	$18,344	$2,068	$16,276
Schedule: FY '98 through FY '99									
Percent Work Completed for Task 3: **50%**									
Task 4: "Conflict Identification & Resolution Alternatives'	$0	$0	$0	$0	$0	$0	$42,293	$0	$42,293
Schedule: FY '98 through FY '99									
Percent Work Completed for Task 4:									
Task 5: "Prioritization of Restoration Projects"	$0	$0	$0	$0	$0	$0	$24,045	$0	$24,045
Schedule: FY '98 through FY '99									
Percent Work Completed for Task 5:									
Task 6: "Develop Implementation Strategies	$0	$0	$0	$0	$0	$0	$7,621	$0	$7,621
Schedule: FY '98 through FY '99									
Percent Work Completed for Task 6:									
Task 7: "Monitoring Program	$0	$0	$0	$0	$0	$0	$38,222	$0	$38,222
Schedule: FY '98 through FY '99									
Percent Work Completed for Task 7:									
Task 8: "Implementation Schedule and Budget"	$0	$0	$0	$0	$0	$0	$6,542	$0	$6,542
Schedule: FY '98 through FY '99									
Percent Work Completed for Task 8:									
Task 9: "General Project Administration"	$0	$0	$0	$0	$0	$0	$0	$0	$0
Schedule: FY '98 through FY '99									
Percent Work Completed for Task 9:									
Phase I Total:	**$114**	**$5,856**	**($5,742)**	**$570**	**$6,312**	**($5,742)**	**$222,530**	**$6,312**	**$216,218**

Quarterly Programmatic Report
Mill Creek Restoration Project

Program Manager Spencer Shepard Phone: 415-778-0999
Project Manager Meghan Mazzoni Phone: 415-281-0432
CALFED Project # #97-N08
Quarter Ending – June 2000

Deliverables

Deliverable	Due Date	% Completion	Date Complete
Task 1 – Site Planning & Preparation (due date extended to June 2000)			
Subtask 1: Site Acquisition			
#1 – Real-estate Option	1/99		1/8/99
#2 – Copy of Deed	3/00		4/12/99
Draft Conservation Easement	3/00		1/3/00
#3- Letter of Assurance	3/00		1/3/00
Subtask 2: Site Planning			
#1 – Site Plan	2/99		2/9/99
Subtask 3: Site Preparation			
#1 - Completion of Site Prep	3/2000		Completed
#2 - Draft and final subcontracts	3/2000		Completed
#3 - Summary report	6/2000		6/29/00

*TNC extended deadlines for Task One to provide more time to plant native grass and replant plants which did not survive year 1.

Task 2 – Planting and Irrigation Installation (due date extended to June 2000)			
Subtask Plant collection and propagation			
#1 – Plant collection and prop	4/99		3/99
Subtask 2: Irrigation			
#1 - Install Irrigation System	3/99		3/99

Subtask 3: - Planting

#1 – Plant Summary Report (Include Irrigation Map)	6/99	1/3/99

Task 3 – Maintenance and Monitoring

Subtask 1 Maintenance

#1 Quarterly report	6/30/01	Pending

Subtask 2 Monitoring

#1 Monitoring protocol	5/99	Draft submitted
#2 Annual monitoring reports	6/01	Pending

NARRATIVE

Task 1 : Site Planning and Preparation

The Nature Conservancy completed acquisition of the site on Dec. 28,1998. The deed was recorded and the draft easement is completed. The site plan was submitted to NFWF on 2/9/99.

Task Order One was modified to include planting native grass at the site. Seed (*Elymus glacus)* was planted in the fall and we observed excellent germination in late January. The grass planting is thriving as of this report.

Task 2 – Planting and Irrigation Installation

Because Valley Oak did not produce acorns in 1998, acorn planting was put off until fall and winter 1999. Acorns were collected in the fall of 1999 from the site and nearby areas in anticipation of planting. In early mid December 1999 students from the Los Molinos School District planted valley oak acorns and installed "milk carton" tree protectors. In early February 2000, 50 non-oak species were re-planted including cottonwood, arroyo willow and sandbar willow. In May, 100 elderberry, 20 wild rose, 160 coffee berry plants were replanted.

Task 3 – Maintenance and Monitoring

The site continues to be mowed for weed control and the irrigation system has been kept in good repair. We continue to have trouble with rodents eating holes in the drip irrigation lines and consuming young plants.

The site was monitored on June 27, 2000 to determine survival rates. The levee plantings (riparian) now have 53% survival. Survival in the interior field is 37%. As the field was overstocked in the initial planting the results indicate reasonable survival rates and give us confidence this planting will be a long term success.

Projected expenses for next quarter

Month 1	Month 2	Month 3	Total

Title **Mill Creek Riparian Restoration Project** Budget year: 2000

Co-applican Mill Creek Conservancy and The Nature Conservancy Statement Quarter: Jun-00

CALFED Project Number: 97-N08

Total Estimated Cost of Phase I: $69,000

Funding from Federal Bay-Delta A(69,000

(In-Kind Services would be listed here if applicable- note: Detail of the service provide would be included.)

Phase I schedule 3 years

Total Project Estimated Completion Date: 3 years

			PHASE I (Quarterly Budget)			**PHASE I** (FY '00 Budget)				**PHASE I** (Three Year Budget)			
			Budget	Accrued xpenditur	Variance *	Budget	Accrued Expenditure	Remaining Balance	**	Budget	Accrued Expenditures	Balance to Complete	**
Task 1:													
		Schedule: FY '98 through FY '99											
		Percent Budget Completed for Task: 24%							**	**12,999**	**4,102**	**8,897**	
	1a	Site Acquisition	0	0	0	657	657	0		657	657	0	
	1b	Site Planning	0	0	0	3,727	1,219	2,508		3,727	1,219	2,508	
	1c	Site Preparation	1,000	1,000	0	8,615	2,226	6,389		8,615	2,226	6,389	
Task 2:		Irrigation installation and planting											
		Schedule: FY '98 through FY '00											
		Percent Budget Completed for Task : 27%							**	**31,012**	**6,654**	**24,358**	
	1a	Plant collection and propagation	0	0	0	2,770	2,021	749		5,540	2,021	3,519	
	1b	Irrigation installation	0	0	0	5,770	2,021	3,749		11,540	2,021	9,519	
	1c	Planting	554	554	0	6,966	2,613	4,353		13,932	2,613	11,319	
Task 3:		Maintenance and Monitoring											
		Schedule: FY '98 through FY '01											
		Percent Budget Completed for Task : 51%								**24,989**	**8,436**	**16,553**	
	1a	Maintenance and Monitoring	4,400	4,393	7	9,017	5,624	3,393	**	18,033	5,624	12,409	
	1b	Monitoring	2,200	2,196	4	3,478	2,812	666		6,956	2,812	4,144	
Phase I Total:			**$8,154**	**$8,143**	**$11**	**$41,000**	**$19,192**	**$21,808**	**	**$69,000**	**$19,192**	**$49,808**	

We budget to the Sub-task level only if they are active during the Quarter in question. If a SUBTASK is complete, the SUBTASK cost rolls-up into the Task level.

** Please explain significant variance.

TNC expects to finish under budget because the original budget was based on large-scale project costs and because this project is so small TNC has found unanticipated cost-savings (example: able to use existing well, lower project management costs, more comprehensive use of volunteers). Also, TNC was fortunate to experience good growing conditions.

QUARTERLY PROGRAMMATIC REPORT

Program Manager Spencer Shepherd Phone 415-778-0999 x 24
Project Manager Becky Waegell
CALFED Project # 97-N14A
Quarter Ending June 30,2000

Deliverables

	Name of Deliverable	Due Date	% of Work Complete	Date Deliverable Complete
Task 1	**Acquisition of 2947 acres in Cosumnes River lower floodplain**		**100%**	**6/99**
Task 3	**Initial Management Activities**		**approx 40%**	**ongoing**
Subtask 1	Surveys and Restoration Plan			
Deliverable 1	Final reports on Archeological and Historical Surveys			ongoing
Deliverable 2	Final reports on Biological Surveys			ongoing
Deliverable 3	Restoration Plan for Park, Whaley			ongoing
Deliverable 4	Riparian, rangeland and bird monitoring plans			ongoing
Deliverable 5	Drafts and final of subcontracts			ongoing
Subtask 2	Infrastructure Improvements			
Deliverable 1	Invoices from cleanup and demolition of Castello Dairy (Park property)			complete
Deliverable 2	Invoices from fence construction on Park property			ongoing
Task 4	**Purchase of Additional floodplain and floodplain-linked properties (including Woods property)**			
Subtask 1	Woods Acquisition		100%	9/99
Deliverable 1	Survey/ HazMat cover page			9/99
Deliverable 2	Closing Statement			9/99
Deliverable 3	Copy of Deed			9/99
Deliverable 4	Easement or Assurance letter			pending resale/transfer

Subtask 2 Service Contracts – stewardship Woods property

Deliverable 1 Vendor invoices	12/00	Ongoing
Deliverable 2 Preliminary site plan	12/00	Ongoing
Deliverable 3 Monitoring report	12/00	Ongoing

Narrative

1. Description of activities performed during the quarter, by task.

Task 1: Acquisition of 2,947 acres in the Cosumnes River's lower floodplain.
Acquisitions complete. Final report submitted with 1999, 3rd quarter, Programmatic Report.

Task 3: Initial clean-up and repair of 5 properties and installation or repair of irrigation systems. Conduct initial biological monitoring and archeological surveys.

-Subtask 1 has been signed.

- Biological monitoring subcontract has been signed, and biological monitoring work has begun on Park, Whaley, Denier, and Shaw properties.
- Biological monitoring subcontract to be amended to include invasive weed survey, riparian restoration manual, restoration plan for Park property north of river, and Elderberry Habitat Conservation Plan.
- Archeological field work has been completed.

-Subtask 2 has been signed.

- Clean-up of the Castello dairy (Park property) has been completed.
- Fencing contract has been signed, the project has been initiated, and completion is anticipated during the next quarter.
- Pipeline installation RFB package has been approved by CALFED. RFB will be initiated in the fall.
- Erosion control (Park property) RFB package has been approved by CALFED.

Task 4: Complete Purchase of additional floodplain and floodplain linked properties, including the Woods property (153 acres). -Task Order 4, subtasks #1 and #2, have been signed by CALFED.

-Subtask 1 The Woods property has been purchased protecting seasonal wetlands and grassland habitat.

-Subtask 2 The Woods property stewardship activities will commence in the next quarter.

Task 4 Additional acquisition plans to be submitted for approval: The Nature Conservancy has recently

narrowed its focus for use of the balance of task 4 acquisition funds to a single acquisition project that will, when complete, help to protect existing riparian, wetland and aquatic habitats along the Cosumnes River, and in so doing, will provide positive benefits for east-side delta tributary fall-run chinook salmon, splittail and other targeted delta species .

The property consists of rectalinear 475 acre parcel which is bisected lengthwise by approximately one mile of Cosumnes River channel. Restoration of the floodplain through levee breaching and other techniques will benefit the same suite of species discussed above. We have had difficulty in arriving at a mutually agreed-upon price, but have now reached an agreement. The property, owned by Richard, Kathy and Fred Denier, is presently under a six month option (exercise date is no later than mid December 2000). The sale price is $1.9 million (supported by an appraisal), to which we would propose that approximately $721,000 of this grant be dedicated. These funds would be supplemented with funds from another CALFED grant and additional funding. Acquisition of this property would help complete linkage of the lower protected floodplain to the Valensin ranch portion.

2. Problems and delays encountered by task:

3. Other issues or comments:

4. Projected expenses for the next three months:

Month 1 $5,000 Month 2 $6,000 Month 3 $ 18,000 Total for quarter $ 29,000

Title **COSUMNES RIVER FLOODPLAIN ACQUISITION AND MANAGEMENT** Budget year: 30-Sep-00

Co-applicants: Nature Conservancy/Wildlife Conservation Board Statement Quarter: 30-Jun-00

CALFED Proj. #: 97N14A

Total Estimated Cost of Phase I: $1,985,100

Funding from Federal Bay-Delta Account $1,985,100

(In-Kind Services would be listed here if applicable- note: Detail of the service provide would be included.)

Phase I schedule 3 years

Total Project Estimated Completion Date 3 years

		PHASE I (Quarterly Budget)				PHASE I (FY '00 Budget)				PHASE I (Three Year Budget)			
		Budget	Accrued Expenditures	Variance	**	Budget	Accrued Expenditures	Remaining Balance	**	Budget	Accrued Expenditures	Balance to Complete	**
Task 1:	**Acq. Of 2,947 Acres - Cosumnes**	$0	($1,144)	$1,144		$11,841	($453)	$12,294		$51,760	$39,466	$12,294	
Task 3:	**Mgmt Activities Park, Whaley, Denier, Shaw**												
	Subtask 1: Initial Management Activities	$20,000	$16,511	$3,489		101,250	43,310	$57,940		135,000	44,934	$90,066	
	Subtask 2: Infrastructure Improvements		$0	$0		230,610	80,924	$149,686		307,480	90,924	$216,556	
Task 4:	**Acquisition, additional floodplain properties**												
	Subtask 1 Woods Acquisition	$0	$0	$0		$461,050	$463,422	($2,372)		461,050	463,422	($2,372)	
	Subtask 2 Woods Stewardship	$500	$119	$381		56,850	119	$56,731		75,800	119	$75,681	
Phase I Total:		**$20,500**	**$15,486**	**$5,014**		**$861,601**	**$587,322**	**$274,279**		**$1,031,090**	**$638,865**	**$392,225**	

We budget to the Sub-task level only if they are active during the Quarter in question. If a SUBTASK is complete, the SUBTASK cost rolls-up into the Task level.

**** Explanation of Variance in Budget :**

Task 1- Expenditures have been reduced by those amounts incurred prior to 1/1/98 and costs not budgeted

Task 4- Acquisition costs on Woods property exceeded budget

Quarterly Programmatic Report

CULLINAN RANCH TIDAL MARSH RESTORATION

CALFED Project No.: 97-N18

Prepared By:

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Submitted By:

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3074 Gold Canal Drive
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10 July 2000

QUARTERLY PROGRAMMATIC REPORT

Program Manager: Spencer Shepherd Phone: 415-778-0999 x24
Project Manager: Michael A. Bias, Ph.D. Phone: 916-782-9100
CALFED Project Number: 97-N18 Cullinan Ranch Tidal Marsh Restoration
Quarter Ending: 31 March 2000

DELIVERABLES:

Task/Subtask	Name of Deliverable	Due Date	% Work Complete	Date Deliverable Complete
Task 1: Permitting	CEQA/NEPA EA/Mitigate Neg. Dec.	1 October 2000		
Task 2: Biological monitoring	Reports	1 January 2002		
Task 3: Environmental education program	Reports	1 January 2001		
Task 4: Survey, Engineering, and Design	Drawings; Technical specifications	1 April 2000		
Task 5: Construction	Photo documentation	1 December 2001		
Construction management, inspection, and testing	Construction inspection plans; Technical specifications	1 January 2002		
Task 6: Project management and reporting	Reports	1 January 2002		

NARRATIVE

Task Order No. 1 – Permitting.
Wetland Delineation**.** The wetland delineation for the approximately 1,500-acre parcel is complete. Submittal to the San Francisco District of the U.S. Army Corps of Engineers will occur by 1 August 2000. We anticipate that a staff person from the ACOE will conduct a sight visit to confirm the delineation within the following two months. The majority of the project site

has, due to the absence of drainage, become a seasonal wetland habitat dominated by cattail (*Typha* sp.).

Biological Assessment. The Biological Assessment is nearly complete and it is anticipated that the document will be available for submittal to the U.S. Fish and Wildlife Service at the end of July 2000. Clapper rail surveys are being performed and will continue to be conducted according the Service's protocol.

The existing habitat on the parcel does not appear to support endangered species or their habitats. However, the outboard levees may support at least one special status plant and potentially the California clapper rail and the salt marsh harvest mouse.

Project Description. Caltrans has expressed some concerns about the proposed Cullinan Ranch project relative to the Highway 37 levee. Currently that levee is not subject to tidal action and Caltrans would like to review the proposed project and the available hydrological data to determine the potential effects to the Highway. USFWS, CDFG and Caltrans met to address this issue in mid-January. Subsequent meetings have occurred among the partners. Preliminary designs include levee protection and reinforcement along highway 37 and the adjacent Fish and Game Pond 1 levee.

Tasks to be initiated in this quarter:
CEQA/NEPA document preparation will begin by May. A lead agency is still needed for the CEQA, discussions are underway with CalTrans, Fish and Game, and the USFWS. Environmental permitting documentation is anticipated to be an Environmental Assessment/Mitigated Negative Declaration. However, at this time we cannot rule out the possibility that the project will require an EIR. Finalization of the project description and initial assessment of the project impacts will be the determining factors. Pre-application Packets were submitted to the US aarrmy Corps of Engineers and an interagency meeting will occur on 12 July 2000 at the US Army Corps of Engineers San Francisco District.

Task Order No. 2 - Biological monitoring.
Salt marsh harvest mice, clapper rails, birds, marsh development, channel morphology, and hydrology will be monitored before, during, and after project completion. This monitoring will provide an indication as to the success of the project. The project will be monitored for at least 3 years. This will be completed in part as a CALFED Task Order. We received approval of the *Rehabilitation of Tidal Salt Marshes in the Northern San Francisco Bay Region: Cullinan Ranch and Tolay Creek Units of the San Pablo Bay National Wildlife Refuge, Biological Monitoring Plan for Cullinan Ranch and Tolay Creek Units.* This document was submitted 12 January 1999.

Results of monitoring efforts to date were summarized in Takekawa, J.W., M. Eagan, R.E. Laird, M.A. Bias, and L.M. Vicencio. 1999. Ecology of slat marsh ecosystems of the San Francisco Bay estuary and restoration of tidal wetlands in San Pablo Bay: 1999 Progress

Report. Unpubl. Rep., U.S. Geological Survey, San Francisco Bay Esturary Field Station, Vallejo, CA. 53pp.

Significant findings at Cullinan Ranch include a dramatic increase in closed cattail marsh, with coverage values for this species going from zero in 1994 at the time farming ended, to 37% in 1998. Water quality is essentially uniform for the unit, with values reflecting a seasonal freshwater marsh and acidic soils. Small mammal trapping efforts on Cullinan Ranch have resulted in the capture of a total of 305 animals in 725 trapnights. Salt Marsh Harvest Mice represented 5% (11/243) of all new captures. Point counts (for small birds) vary with season, with a greater number of individual observations and a greater number of species present during wet season samples. Large scale surveys (for large birds) have resulted in a greater number of individual observations in wet season sampling, but a lower number of species present. Geographic information analysis for Cullinan Ranch has facilitated pre-project planning, and generated new research questions, including examination of the rate of cattail recruitment.

Vegetation

Cullinan Ranch data from 1998 shows a marked increase in the percent cover represented by cattail *(Typha latifolia)* The results of the vegetation transect surveys show that cattails represented 23% of total cover values, by transect, in 1998 and 37% of areal coverage in the 1998 aerial photo of Cullinan Ranch. Observations of increased cattail growth during 1999 indicate the probability that cattails will continue to increase their areal coverage, decreasing edge and open water habitats. In the wet season, the majority of litter present is also of this species. Other species that represent more that 1% of total cover are *Agrostis avenacea* (9.5%) and *Cotula coronopifolia* (5.1%).

Water Quality

Very little standing water is present at Cullinan Ranch in the dry season, except in major slough channels. Wet season values for open water areal coverage was 42% during the wet season of 1999. Currently, the sampling SOP is under revision to outline a sampling procedure that will more accurately reflect existing seasonal hydrologic conditions, while still remaining flexible enough to be used for comparisons as water levels increase post-project. Wet season water quality conditions are essentially uniform for the unit, with values reflecting a seasonal freshwater marsh and acidic soils.

Small Mammals

Thirteen sites centered on 1 km UTM grids at Cullinan Ranch were trapped in 1994 and 1995. These data were analyzed using the program CAPTURE, which generates population size estimates. Ten of these historic mammal trapping sites have been trapped during late 1998 and early 1999 at Cullinan Ranch. A total of 305 animals were captured (or re-captured) in 725 trapnights. Eleven Salt Marsh Harvest Mice (SMHM), *Reithrodontomys raviventris*, have been captured in this effort, representing 5% of new captures. Captures of the house mouse (*Mus musculus*) represent 60% of all new captures at Cullinan Ranch. The Western Harvest Mouse (*Reithrodontomys megalotis*), represents another 20% of new captures, and the

remainder is made up by the Meadow Vole (*Microtus californicus*) at 15%, and two rats. The 1998 - 1999 data will be analyzed and compared with the 1994 - 1995 data.

Birds

Large scale surveys (emphasizing larger bird species) resulted in a greater number of individual observations during wet season sampling, but a lower number of species were present. Large scale bird surveys for 1998 and early 1999 at Cullinan Ranch documented a maximum of 47 species, the majority of which are typically associated with freshwater wetlands. Point counts (emphasizing smaller bird species) varied with season, with a greater number of individual observations and a greater number of species present in the wet season samples.

Geographic Information

We obtained pre-project infrared aerial photographs (1:30,000 scale) of Cullinan Ranch. Each image was scanned into a computer readable format at 800 dpi, and has a resolution of 1 meter per pixil. Using the geographic information system (GIS) program ArcView, each image has been geo-referenced and overlaid with a UTM grid system.

Task Order No. 3 - Environmental education program.

This will be completed in part as a CALFED Task Order that is currently being drafted.

Task Order No. 4 - Survey, engineering, and design.

Survey the project area and finalize project designs and engineering. This will be completed in part as a CALFED Task Order that has been drafted and awaiting approval.

Task Order No. 5 - Construction.

The existing levee along highway 37 may need to be reinforced or a new levee constructed to protect the highway prior to breaching from tidal waters within the project. This will be completed in part as a CALFED Task Order that has been drafted and awaiting approval.

Breach the Dutchman Slough Levee in 5 locations, each 500 feet long. The spoils shall be placed on the Cullinan Ranch property.

Inspection and testing will be performed as a portion of this Task Order in accordance with the Inspection Plan developed by DU. When the contractor has reached a point in construction where inspection is required to proceed, they will provide a minimum of 48 hours notice to the engineer.

Task Order No. 6 - Project management and reporting.

DU will act as project manager. As such DU will be responsible for all project administration, accounting, and quarterly and final reporting requirements. This will be completed in part as a CALFED Task Order that is currently being drafted.

Quarterly Programmatic Report

TOLAY CREEK RESTORATION PROJECT

CALFED Project No.: 97-N19

Prepared By:

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Submitted By:

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10 July 2000

QUARTERLY PROGRAMMATIC REPORT

Program Manager: Spencer Shepherd Phone: 415-778-0999 x24
Project Manager: Michael A. Bias, Ph.D. Phone: 916-782-9100
CALFED Project Number: 97-N19 Tolay Creek Restoration Project
Quarter Ending: 31 March 2000

Deliverables:

Task/Subtask	Name of Deliverable	Due Date	% Work Complete	Date Deliverable Complete
Task 1: Construction	Photo documentation; reports	1 Feb 99	100	18 Dec 98
Subtask 1.1: Perimeter levee	Photo documentation	1 Sep 98	100	18 Dec 98
Subtask 1.2: Channel dredging	Photo documentation	1 Feb 99	100	30 Nov 98
Subtask 2.0: Construction management	Construction inspection plans; Technical specifications	1 Feb 99	100	18 Dec 98
Subtask 3.0: Project management	Reports	17 Jun 01	50	
Task 2: Biological monitoring	Reports	17 Jun 01	50	

Narrative

Task Order No. 1 – Construction.

The project design for construction activities was completed during April 1998. Agency approvals and permits were obtained and a contractor was hired in mid-May 1998. A Notice to Proceed for the construction activities was issued at the end of May 1998.

Project construction on the site began 18 June 1998 on items other than those funded by Cal-Fed. Following are descriptions of activities performed on the Tolay Creek Restoration Project, CALFED Project No. 97-N19 for the quarter ending 30 June 1999 for Task Order No. 1 - Construction.

Subtask 1.1, Perimeter Levee

This item was funded partially through CALFED. Construction began on 25 June 1998. Land based earthmoving equipment prepared the footprint of the levee, compacted embankment was conditioned and placed, and the levee was trimmed to the design cross section. All work associated with the perimeter levee was completed 18 December 1998. All final deliverables for this subtask were completed under the previous Quarterly Report. Representatives from CALFED and the National Fish and Wildlife Foundation (NFWF) inspected the completed project on 28 January 1999.

Subtask 1.2, Channel Dredging

This item was fully funded by CALFED. Dredging of the channel began on 28 September 1998. Amphibious earthmoving equipment was mobilized, suction dredge discharge pipeline placed, the channel was excavated to the design cross section, and the sediment was discharged to the California Department of Fish and Game lagoon. This subtask was completed by 30 November 1998. All final deliverables for this subtask were completed under the previous Quarterly Report. Representatives from CALFED and the National Fish and Wildlife Foundation (NFWF) inspected the completed project on 28 January 1999.

Subtask 2.0, Construction Management

This item is being partially funded by CALFED. Construction management started on 25 June 1998 and was completed on 18 December 1998. This item consisted of Ducks Unlimited's staff and hired consultants performing construction staking, construction inspection, construction testing, and construction management to insure the construction activities comply with the design. All final deliverables for this subtask were completed under the previous Quarterly Report.

Subtask 3.0, Project Management

This item is partially funded by CALFED. Project management began on 1 May 1998 and is 50% complete to date. The remaining 50% are reserved for Task Order 2, further project administration and reporting, and Monitoring Task Order, which is being developed. This item consists of Ducks Unlimited's staff coordinating all activities between the funding partners, landowners, and the regulatory agencies involved. This Subtask is on-going through completion of Task Order 2.

Task Order No. 2 - Biological Monitoring

Task Order No. 2 -- Biological monitoring Task Order was signed and is currently being implemented. We received approval for the *Rehabilitation of Tidal Salt Marshes in the Northern San Francisco Bay Region: Cullinan Ranch and Tolay Creek Units of the San Pablo Bay National Wildlife Refuge, Biological Monitoring Plan for Cullinan Ranch and Tolay Creek Units*. This document was submitted 12 January 1999.

Results of monitoring efforts to date were summarized in Takekawa, J.W., M. Eagan, R.E. Laird, M.A. Bias, and L.M. Vicencio. 1999. Ecology of slat marsh ecosystems of the San Francisco Bay estuary and restoration of tidal wetlands in San Pablo Bay: 1999 Progress Report. Unpubl. Rep., U.S. Geological Survey, San Francisco Bay Esturary Field Station, Vallejo, CA. 53pp.

Physical and biological data collection began during 1998 and is ongoing to document changes resulting from these major modifications, and pre-project data provides a basis for comparison. Significant findings at Tolay Creek include pre-project characterization of the vegetation community along the drainage. Pickleweed *(Salicornia virginica)* dominates the lower reach, and weedy species such as Dock *(Rumex crispus)* and Prickly Lettuce *(Cactuca serriola)* are dominant in the upper reach. Water quality testing showed a pre-project shift in pH along the drainage, reflecting soil conditions resulting from historical agricultural practices. Water quality values are more uniform post construction. Small mammal trapping efforts at Tolay Creek resulted in the capture of a total of 246 animals in 600 trapnights. Salt Marsh Harvest mice represented 7.6% of all new captures. Results for birds at Tolay Creek are similar to those at Cullinan Ranch, with greater numbers of individual observations and species present in wet season point counts. Surveys for large birds also show a greater number of individual observations during wet season sampling, but a lower number of species were present. GIS analysis of Tolay Creek images has facilitated adaptive management as the project has developed, as well as supporting spatial analysis of biological and physical components.

Vegetation

We sampled vegetation along each of the 9 study transects at Tolay Creek, providing the raw data for "pre-project" analysis of the vegetation community and structure. A total of 21 species were documented (Table 3). In addition to species representative of the salt marshes and reclaimed fields of the North Bay, we also documented a plant not currently on the species list for the Refuge, the Sea Milkwort (*Glaux maritima*). The plant is located at the edge of San Pablo Bay at the mouth of Tolay Creek. In addition to being new for the refuge, this is the first record of the plant in Sonoma County (P. Baye, pers. com.).

Water Quality

At Tolay Creek, water samples were taken in the main channel at each study transect. The pre-project data shows fairly consistent water quality conditions for most parameters measured along the drainage, except for a marked decrease in pH. The pH became more acidic as

distance from the mouth increased. This variation is a reflection of the presence of oxidized peat soils, a result of historic agricultural practices. With restored tidal action this variation in pH has decreased significantly.

Tidal Cycles

Tidal cycles at Tolay Creek are being measured by a series of data loggers placed along the reach of the creek. The data loggers, attached to pressure transducers that measure the amount of water above their position, record continuously at specified time periods to include complete tidal cycles. Records of tidal cycles at Tolay Creek have been collected since 1/29/99, with a few short periods missing due to equipment problems. The data shows predictable tidal cycles and what appears to be an increase in overall tidal range due to a lowering of the low tide heights in the upper lagoon at Highway 37.

Small Mammals

Mammal trapping at eight Tolay Creek transects was completed pre-project, and analysis, including estimates of the Salt Marsh Harvest Mouse (SMHM - *Reithrodontomys raviventris)* population, is ongoing. A total of 246 animals were captured in 600 trap nights. Other species captured include the Western Harvest Mouse (*Reithrodontomys megalotis*), the House Mouse (*Mus musculus*) and the Meadow Vole (*Microtus californicus*). Trap sites were centered on or near established study transects, between Hwy 37 and the mouth of Tolay Creek. SMHM represented 7.6% of new captures, with the majority of captures (55% of all SMHM captures) from grids in the weedy upper reaches of the drainage (transects 7-9), and not at the transect nearest the mouth of the creek (transect #2) where there is mature Pickleweed marsh.

Birds

Pre-project bird surveys were completed along Tolay Creek, documented a maximum of 40 species. Noteworthy observations included repeated sightings of a Peregrine Falcon *(Falco peregrinus)*. Results for birds at Tolay Creek were similar to those at Cullinan Ranch, with greater numbers of individual observations and species present during wet season point counts. Surveys for large birds also showed a greater number of individual observations during wet season sampling, but a lower number of species were present.

Fish

Sampling was conducted post-project, over the spatial gradient of the creek drainage, to form a baseline profile for fish species present in Tolay Creek. A total of 2,771 fish of 6 species were caught during a two day sampling effort. The largest individuals, in order, were striped bass, yellowfin goby, staghorn sculpin, inland silversides, threespine stickleback, and mosquito fish. Two bat rays (*Myliobatis californicus*) were seen swimming in water less than 0.5m deep while sampling was being conducted in the CDFG lagoon. Most of the fish were captured in shallow water areas opposed to deeper channels and in vegetated area vs. non-vegetated.

Sediment Accumulation

Sediment pins placed in the creek and lagoons measure the accumulation of sediment deposited from the incoming tidal waters. The distance from the top of the pin (PVC pipe) to the surface of the sediment is measured with a rigid, calibrated rod. Differences in the measurements from one time to the next are used to determine if the sediment in the creek is accumulating or scouring at each particular point measured. The measurements in sediment accumulation, to date, show an overall trend toward sediment accumulation. The lower CDFG pond is showing sediment accumulation over the entire pond. Other areas of the creek are showing accumulation and scour in different areas as the system comes into a dynamic equilibrium.

Geographic Information

We obtained pre- and post-project infrared aerial photographs (1:30,000 scale) of Tolay Creek. Each image was scanned into a computer readable format at 800 dpi, and has a resolution of 1 meter per pixel. Using the geographic information system (GIS) program ArcView, each image has been geo-referenced and overlaid with study transects. GIS imagery based on aerial photos taken in September and December 1998 for Tolay Creek have been geo-referenced. GIS data has been utilized to determine the extent of post-project inundation. Additional layers integrating geographic data with SMHM distributions and vegetation are under construction.

CALFED CONTRACT NO. 97-N19
TASK ORDER 1

Tolay Creek Restoration Project
Applicant: Ducks Unlimited
CALFED Project Number:#97-N19

Budget year: 2000
Statement Quarter: 3rd
Ending: 7/10/00

Total Estimated Cost of Phase I: $243,000
Funding from Federal Bay-Delta Account 243,000

Phase I schedule 1 year
Projected Phase II schedule * 1 year
Total Project Estimated Completion Date: 2 years

		PHASE I (Quarterly Budget)				**PHASE I (FY '99 Budget)**				**PHASE I (One Year Budget)**			
		Budget	Accrued Expenditures	Variance	**	Budget	Accrued Expenditures	Remaining Balance	**	Budget	Accrued Expenditures	Balance to Complete	**
Task 1: Construction		$183,000	$183,000	$0		$183,000	$183,000	$0		$183,000	$183,000	$0	
	Schedule: FY '98 through FY '99												
	Percent Work Complete for Task 1: **100%**												
1a	Levee Construction	$23,000	$23,000	$0		$23,000	$23,000	$0		$23,000	$23,000	$0.00	
1b	Channel Excavation	$160,000	$160,000	$0		$160,000	$160,000	$0		$160,000	$160,000	$0.00	
Task 2: Construction Management		$40,000	$40,000	$0		$40,000	$40,000	$0		$40,000	$40,000	$0	
	Schedule: FY '98 through FY '99												
	Percent Work Complete for Task 2: **100%**												
2a	Construction Management	$40,000	$40,000	$0		$40,000	$40,000	$0		$40,000	$40,000	$0.00	
Task 3: Project Management		$20,000	$10,100	$9,900		$20,000	$10,100	$9,900		$20,000	$10,100	$9,900	
	Schedule: FY '98 through FY '99												
	Percent Work Complete for Task 3: **50%**												
3a	Project Management	$20,000	10,100	9,900		$20,000	10,100	9,900		20,000	10,100	9,900	
Phase I Total:		**$243,000**	**$233,100**	**$9,900**		**$243,000**	**$233,100**	**$9,900**		**$243,000**	**$233,100**	**$9,900**	

We budget to the Sub-task level only if they are active during the Quarter in question. If a Subtask is complete, the Subtask cost rolls-up into the Task level.

CALFED QUARTERLY PROGRAMMATIC REPORT
April, May, June 2000

Program Manager Spencer Shepherd, Bay-Delta Grants Manager
Project Manager James R. Tischer, Executive Director
CALFED Project # 97-N20
Quarter Ending June 30, 2000

Introduction: This report outlines the progress toward fulfillment of our agreed objectives over the fourth quarter of the second year (months April 1, 2000 through June 30, 2000) of the grant period of contract #97-N20.

Task 1: Media campaign for 1998 — Completed
Task 2: Unification of database — Completed
Task 3: Build LFN capacity through June 1999 — Completed

Task 4: Reporting

4.1 Quarterly narrative and financial reports

The narrative and financial reports are included.

Percent of work completed (Task 4.1): 66%

4.2 Bookkeeping services

Invoices through February 2000 have been submitted to CALFED.

Percent of work completed (Task 4.2): 66%

4.3 Administrative upgrade

Percent of work completed (Task 4.3): 100%

Task 4 Deliverables

- Quarterly narrative and financial reports (inclusive)
- Invoices through May 2000 (submitted under separate cover)

Task 5: Implement Biological Farming Promotion Campaign

Task 5.1 Biological Farming Promotion Campaign, 1999

Percent of work completed (Task 5.1): 100%

Task 5.2 Implement year 2000 activities of the promotion campaign

Media campaign planning

Over the last two quarters, CAFF has been involved in a strategic planning process the goal of which is to integrate LFN and BIOS program efforts into one Biological Farming Program. As a part of this process, previously established teams such as the former creative team of the Communications Department have been rearranged into three planning groups: the Message Development Workgroup, the Publishing Integration Workgroup and the Program Planning

Workgroup. Following are the results of several months of meetings to determine the future direction of CAFF.

Message Development

This quarter the message development team focused on defining biological farming and defining the goals of the Biological Farming Program. Biological farming emphasizes farming in harmony with nature, using intensive farm management techniques. Farm monitoring and analysis of crop production variables provides the basis for practices that make good economic sense, emphasize stewardship and conserve natural resources. Those practices

- Rely on biological and cultural control of pests,
- Create farm habitats for beneficial organisms,
- Use cover crops to provide nutrients, control soil erosion, and enhance water use efficiency,
- Foster farmer-to-farmer learning that promotes good stewardship.

Biological farming is cost-effective, innovative, and adaptable to regulatory and economic changes affecting California farmers.

The team also worked on the goals of the Biological Farming Program, identified key elements of Biological Farming messages and brainstormed potential Biological Farming Program slogans. The goals are to

1. Increase the number of growers using biological farming methods.
   Message: Adopt biological farming methods on your farm.
2. Increase CAFF's capacity to do communications work.
   Message: CAFF is dedicated to broadening the knowledge base for biological farming, and disseminating that information to as large and diverse an audience as possible.
3. Increase the public's awareness of biological farming and CAFF.
   Message: Support biological farming and the farmers who use biological farming methods.
4. Spark biological practices in crops not currently using them.
   Message: Biological farming methods are proven and can be used with all crops.

Biological Farming Program messages will convey these key elements:

- *Farmers need to adapt to change.*
- *Biological farming is a highly effective way to produce food and manage natural resources.*
- *Biological farming is the best model for the future of agriculture.*

See the attached Biological Farming Program Message Development notes for more details.

Publications

The Publishing Integration Workgroup produced its first *Farmer to Farmer* in May. Previously titled *The Foghorn*, the newsletter presents a new layout, yet continues to publish quality technical information from the field and announce both upcoming LFN and BIOS events. Plans are underway to expand *Farmer to Farmer* to include coverage of practical, sustainable farming techniques and commentary on farming issues of general interest.

The Agrarian Advocate, CAFF's quarterly publication, will also change format with the next issue. However, it will continue to include quality, in-depth articles on farming, sustainable agriculture and ecological issues. The center section of *The Advocate*, titled "Farmer to Farmer" will now be pulled out and published under its own title (as noted above).

Program Planning
After several months of planning and several regional meetings, the Program Planning Team, lead by CAFF's Program Director, Reggie Knox and Deputy Program Director, Mark Cady, synthesized information into a comprehensive "Biological Farming Program Plan 2000." This plan outlines the goals and objectives for the Biological Farming Program and details eleven "options" for specific directions in the fulfillment of those goals. The options are a result of meetings that included not only CAFF staff but several important stakeholders, such as local farmers (in each region), agency personnel and other persons directly involved in agriculture. Participants discussed options and then rated them. The criteria for rating were a perceived estimation of the importance for CAFF to pursue a particular option. The three options that received the highest rating were:

- Partner with commodity boards to implement biological farming practices.
- Focus on statewide/regional policy and legislation to institutionalize biological farming education and extension.
- Expand into new crops with full-fledged BIOS programs. Some suggestions were alfalfa, stonefruit, grapes, citrus.

The Biological Farming Program Plan includes an extensive workplan for carrying out current work as well as an elaborated plan for pursuing each of the options. It also includes strategies for pursuing funding and ways to achieve CAFF's mission and goals while remaining viable.

Media Promotional activities
CAFF activities continue to be featured in a variety of newspapers and trade magazines. Below is a partial list of publications where we received coverage in the past quarter:

Ag Alert *Merced Sun Star* *Modesto Bee*
Capital Press *Nut Grower* *Davis Enterprise*
Winters Express *Stockton Record* *Woodland Daily Democrat*
Vacaville Reporter
CAFF also received coverage on the AgEx.com news page, which is consulted by14,000 – 16,000 readers every day for the ten or more news stories posted daily.

Web Site
CAFF can now self-administer its Web site. The new interface allows CAFF to check the number of hits in a given time period. Traffic on the site increased to approximately 42,300 hits per month in March, April, May and June. While we are still refining all the links and items necessary, we are currently capable of updating LFN and BIOS meeting information on CAFF's online calendar, modifying community-supported agriculture lists, and presenting new articles about CAFF. The site has expanded to include more links such as localharvest.com and the California Federation of Farmers' Markets.
Customers are also able to download an order form for the *National Organic Directory* through the Web site and sign up as members or business partners. Electronic versions of all CAFF newsletters and publications as well as regular updates will soon be available.

Trade Show Participation
Central Valley Mosaic (May 1 – 11, 2000)

A two-day event staged by the Great Valley Center at the Radisson Hotel in Sacramento, this trade show was attended by 700 state legislators, department personnel, public officials, business and agriculture leaders, and environmental groups. Jim Tischer, CAFF's Executive Director, spoke about third-party impacts of water transfers. Other speakers covered the topics of urban encroachment, farmland preservation and the effects of the population explosion in the Central Valley. CAFF was present with its most up-to-date biological farming information, including *Farmer to Farmer, Agrarian Advocate* and BIOS and Lighthouse Farm Network flyers.

Heartland Conference, Committee for Sustainable Agriculture (June 10–11, 2000)
In addition to presenting CAFF's biological farming information, several representatives from CAFF participated in the Heartland Conference, including the Executive Director and CAFF's field staff members in the San Joaquin area. Over 300 people attended the two-day conference featuring discussions and seminars on various topics relating to sustainable agriculture, such as attracting wildlife to farms and an overview of water, the environment and urban demands. CAFF co-sponsored the event, which was held at California State University, Stanislaus, in Turlock.

Other Public Events

Gala at Glide Ranch (June 5, 2000)
This was a celebration bringing together CAFF members, the local press, policy makers, agency representatives, and funders. Claire Cummings of the Food and Farming Forum spoke about the connections between healthy food and healthy farming. Adrienne Alvord from the Department of Pesticide Regulation highlighted CAFF's role in the future of sustainable agriculture. Guests enjoyed fresh food donated by local farms. The Gala refreshed CAFF's relationships and received press coverage in the local papers as well as on the radio in the Bay Area. Yolo County walnut farmer, Craig McNamara, was presented with the first Sustainable Farmer of the Year award for his outstanding contributions to sustainable agriculture.

Farm Tour 2000
The Farm Tour was hosted this year at the Glide Ranch as a collaborative effort between the University of California Sustainable Agriculture Research and Education Program, the Yolo County Resource Conservation District, and CAFF. It featured tabletop displays highlighting local success stories and information on sustainable agriculture in the state. In all there were 26 speakers, four discussion panels, and two farm visits, one of which included eight hands-on sessions. Over 120 people attended, visiting local farms to learn about native grasses, hedgerows, Integrated Pest Management, composting, soil science and eco-labeling as market driver. CAFF's program director presented the plan for CAFF's Biological Farming Program to growers, legislators and researchers. Attached is a computer printout of the slide presentation of the Biological Farming Program, a Farm Tour program, and the press packet designed for the tour.

Task 5.2 Implement Year 2000 activities of the promotion campaign

Percent of work completed: 50%

Task 5.2 Deliverables

- Agenda for quarterly creative team meeting (Biological Farming Strategy team)
- Results of Biological Farming Strategy meetings:
  - Biological Farming Program Message Development notes
  - Biological Farming Program — 2010 slide presentation (print-out from PowerPoint)
  - Biological Farming Program Plan 2000
- Advertising strategy:
  - Usage statistics for caff.org

- Selected media coverage
- Farm Tour Press Packet and program
- Gala program and pictures

Task 6: Coordinate BIOS in Madera, San Joaquin and Colusa counties, 1999.

December 31, 1999, marked the end of Task 6.

Percent of work completed (Task 6): 100%

Task 7: Plan the strategy for transition of BIOS projects in Colusa, Madera, San Joaquin and Yolo/Solano counties

The BIOS Transition Plan summary report was delivered to CalFed on April 13, 2000. The BIOS Transition work begins under Task 10 in June 2000.

Percent of work completed (Task 7): 100%

Task 8: Evaluate pesticide use reduction

California Institute for Rural Studies (CIRS) is subcontracted by CAFF to collect and analyze data on pesticide use reduction. For this quarter, data was collected for Stanislaus County, Madera County and San Joaquin County. Data is summarized in a narrative report and interpreted in tabular form in the attachments.

Percent of work completed (Task 8): 50%

Deliverables:

- Summary of Meeting Notes CIRS and CAFF, June 16, 2000
- Summary Quarterly Report on CIRS Evaluation of CAFF
- BIOS Almond Production System
- Summary Table Percentage of Growers Treating (San Joaquin)
- Summary Table Lbs/Acre (Merced1992 – 1997)
- Summary Table Lbs/Acre (Stanislaus 1993 – 1997)
- Summary Table Lbs/Acre (Madera 1995 –1996)
- Summary Table Lbs/Acre (San Joaquin 1995 – 1996)

Summary of Task 8 Deliverables:

Task 8 Deliverables	Supplied to CalFed	Due to CAFF from CIRS
Summary data reports for Merced 1993, 1994, and pre-1993	Jan 10, 2000 report	
Summary reports Merced 1995, Stanislaus 1994 and 1995, comparisons for Stanislaus 1993	July 10, 2000 report	
Summary reports Merced 1996, 1997, Stanislaus 1996. Comparisons for Madera 1995.	July 10, 2000 report	
Summary Madera 1996, San Joaquin 1996 Stanislaus 1997. Comparisons for San Joaquin 1995.	July 10, 2000 report	
Summary for Merced 1998, Stanislaus 1998, Madera		**Due 7/31/00**

1997.		
Summary for San Joaquin 1997, San Joaquin 1998 and Madera 1998		**Due 10/15/00**
Summary reports for Madera 1999 and San Joaquin 1999		**Due 12/31/00**
Final narrative reports		**Due 3/31/01**

Task 9 : Through the Lighthouse Farm Network (LFN), offer consistent technical support to farmers

9.1 Hold LFN monthly meetings, field days, farm tours in Madera, San Joaquin, Merced, Stanislaus and Yolo/Solano counties.

Below is a calendar of LFN events held during the quarter. Following the calendar are descriptions of the events.

Calendar of LFN events

LFN EVENT TOPIC	COUNTY (City)	DATE	Featured Speakers (CAFF Staff)
Harlan Winter Cover Crop Trial for Processing Tomatoes	Yolo/Solano (Yolano)	4/4/00	Gene Miyao, UCCE Paul Robbins, Yolo Co. RCD (Mark Cady)
Walnut Growers Field Day: Cover Crops in Walnuts	San Joaquin (Stockton)	4/11/00	Fred Thomas, Cerus Consulting; Bob Bugg, UCSAREP; (Gwen Huff)
Preparing Soil & Tissue Sampling for Nitrogen Testing	Stanislaus (Modesto)	4/18/00	Mike Buttress, A & L Labs (Gwen Huff)
Merced/Stanislaus CAFF Chapter Meeting	Merced (Merced)	4/24/00	Mike Ruhland, CAFF Chapter President (Gwen Huff)
Soil Irrometers	San Joaquin (Stockton)	4/25/00	Earl Hiatt, Hiatt Enterprises (Russ Hill)
Agricultural Tourism for the Farmer Field Day at Double T Ranch	Merced (Stevinson)	4/28/00	Tony Azevedo, Double T Ranch: Mark McAffee, Organic Dairy & Apples; (Gwen Huff)
Merced/Stanislaus Chapter meeting: U.C. Merced Forum	Merced (Merced)	5/15/00	Gwen Huff (Roundtable discussion)
The Glassy-winged Sharpshooter: A Serious Pest	Madera (Madera)	5/16/00	Don Mayeda, Madera Co. Deputy Ag Commissioner; (Gwen Huff)
Agricultural Conservation Easements	Stanislaus (Modesto)	5/16/00	Greg Clark, American Farmland Trust; Jennifer Foster, NRCS; Dave Zollinger, Landowner; (Gwen Huff)
Using Dairy Lagoon Water to Fertilize Trees: BIOS Field Day	Merced (Hilmar)	5/23/00	Marsha Campbell Mathews, UCCE; Mike Seward, Seward Farms; Jeff Strumm, Clauss Dairy Manager; (Gwen Huff)
UC Merced Public Forum: How will UC Merced address agriculture and the San Joaquin Valley?	Stanislaus (Livingston)	5/24/00	Roger Samuelson, UC Merced; Bill Nicholson, UC Merced; Peter Koch, Merced Co. Farm Bureau; Karen Merritt, UC Merced; (Gwen Huff)

Thrips, Mites & Other Four-letter Words	Madera (Madera)	5/24/00	Gwen Huff, CAFF Roundtable Discussion
Soil Amendments: Compost & Mulch: Roundtable Discussion	San Joaquin (Stockton)	6/21/00	Russ Hill, CAFF
Agricultural Tourism	Stanislaus (Livingston)	6/22/00	Keith Boggs, Management Consultant
Proper Use of Timing of Clinch for the Control of Ants in Almonds	Madera (Madera)	6/22/00	Paul Reising, Sr. Product Development Specialist, Novartis; (Kerry Washinko)
Glassy-winged Sharpshooter: Identification and Monitoring	Yolo (Davis)	6/23/00	Scott Paulsen, Yolo Co. Ag Commissioner; Thomas Esser, CDFA; (Mark Cady and Molly Johnson)
FOOD (Future Options on Development) Initiative Public Forum	Stanislaus (Modesto)	6/29/00	Jan Ennenga, Stanislaus Co. Farm Bureau; Tom Mayfield, Supervisor, Stanislaus Co.; Denny Jackman, Chairman of FOOD; Charlie Woods, Planning Director, Turlock

Highlights of the meetings follow:

April 4, 2000
Yolano, Yolo/Solano County
"Harlan Winter Cover Crop Trial for Processing Tomatoes"
Gene Miyao, University of California Cooperative Extension
Paul Robins, Yolo County Resource Conservation District

This is the second year LFN growers went out to see processing tomato grower Blake Harlan's cover crop experiment. Blake told the group about the year-to-year differences in managing his cover crops. Last year, the cover crop was easy to mow down mechanically, but this year it was very difficult. The vetch and peas went down easily with a sled and two coulters, but he needed a rototiller to incorporate the grasses.

Paul Robins of the RCD reviewed the experimental design, which consists of cover cropped and fallowed plots. Four different amounts of nitrogen (N) are applied in the spring on top of the fallow or cover cropped plots. He tests for soil N, crop N, run-off and crop performance.

Gene Miyao of UC Cooperative Extension discussed balancing the goal of crop rotation with the goal of maximizing tomato production. "Perfecting management practices is well worth it," Gene said, "and timing is crucial." The trick of breaking up the rotation and getting more biomass needs to be balanced with a good seedbed. Gene also reminded growers that getting the cover crop in early — by mid-October — helps outcompete weeds. In Gene's trials, cover crops reduced run-off by 40% in the last el niño year, while over-all run-off reductions in the experiment are as high as 75%.

Louise Jackson, from UC Davis Department of Vegetable Crops, said that cover crops bring increased biomass, which leads to increased soil organic matter and reduction in disease. Sometimes, however, there is a microbial tie-up of nutrients. To address this situation, she adds about 45 tons of compost at incorporation time. She is seeing a five to ten percent increased yield in lettuce crops in Salinas, where her trial is located.

April 11
Linden, San Joaquin County
"Field Day for Walnut Growers: Cover Crops in Walnuts"

Fred Thomas, Cerus Consulting
Two beautiful neighboring orchards, the Anderson-Barngrover Ranch and Ferrari Family Farms, hosted this field day.

- Dave Taylor, farm manager at Anderson-Barngrover discussed why he chose mustard, vetch and tritical for cover crops in his orchard. Dave produced a historic picture of this very same orchard on April 11, 1950 (exactly 40 years before) with mustard that stood well over six feet tall.

- Dr. Robert Bugg with UC Integrated Pest Management, discussed earthworms and other beneficial insects that contribute to a biologically diverse orchard.

- Fred Thomas of CERUS Consulting, discussed the cover crops chosen in the Ferrari and Anderson -Barngrover orchards, and described the benefits and problems of each. He also demonstrated how to measure the approximate amount of nitrogen that a particular cover crop would provide.

- Kelly Bearden, director of the Valley Sierra Small Business Development Center and Steve Foiada presented a cover crop picture board, composed of photos taken from January through July, in the same area of a cover crop. This board took folks on a journey of the growth, maturation, seeding and successful management of a particular cover crop in a growing season.

This field day was also about sharing information between neighbors. Dave Taylor said: "Get to know your neighbors. I've never been that far in Wayne Ferrari's orchard and we are neighbors!"

April 28, 2000
Stevinson, Merced County
"Agricultural Tourism as an Option for Small Farmers"
Tony Azevedo, Double T Ranch
How can the entertainment business supplement a 500-head organic dairy operation?
Tony Azevedo has figured out a way. His Double T Ranch in Stevinson doubles as an entertainment facility with a carriage museum and an Old West town. He draws a steady stream of weddings and other special events to the site. "For weddings we do a full-service deal," Azevedo said. "My wife, Carol, coordinates the whole thing for the families involved so that all they have to worry about is getting out here and having a good time."

Tony has never advertised the Double T Ranch; the operation exists entirely on its word-of-mouth reputation. "If we advertised, it would put this thing right over the top," he said. "Then it gets to be too much like a job and that's the last thing we want."
Merced County Planning Department representative Bob King attended the meeting to encourage local farmers to consider ag tourism as a way of staying in business. "The more small farmers we can keep in business, the more we can retain the character of our rural countryside. Our goal is to keep Merced County from looking like Los Angeles or Orange counties."

Denise Skidmore, of the UC Small Farms Center and Kelly Bearden, Director of the Valley Sierra Small Business Development Center, offered farmers information about on-farm safety, customer relations, farm tours, and links to other ag tourism information sources.

May 16, 2000
Madera, Madera County
"The Glassy-winged Sharpshooter: A Serious Pest"
Paul Verdegaal, UCCE Farm Advisor
The Glassy-winged Sharpshooter has quickly become a hot topic among grape, almond and citrus growers as well as people in the nursery industry and state agricultural agencies. It has the potential to damage and destroy large agricultural commodities in a short amount of time.

Native to the southeast region of the U.S., the glassy-winged sharpshooter overwinters as an adult on mostly green vegetative hosts, although it has been found on one and two-year-old grape canes during the winter. It is a vector of *xylella fastidiosa,* commonly known as Pierce's Disease, in grapes. The insect is highly adaptable and because of the damage it can cause has been given a "B" rating by the California Department of Food and Agriculture, which allows Agricultural Commissioners the latitude to restrict movement of plant materials and to employ control methods where the pest has been found. A variety of control methods have been used thus far, but the concern is that none will completely do the job. Alternative control methods are being explored so as not to rely too heavily on pesticides.

May 23, 2000
Hilmar, Merced County
"Using Dairy Lagoon Water to Fertilize Trees"
Marsha Campbell Matthews, UCCE Stanislaus 4-H Farm Advisor
Mike Seward, Seward Farms
Marsha Campbell Matthews presented her system for using dairy run-off water — which is rich in nitrogen and potassium — as a fertilizer source for almond trees. The system requires some set-up costs and effort, but it can provide an efficient and ecological means of recycling dairy water for beneficial uses. The system includes meters to regulate water flow, because too much nitrogen can be detrimental to the trees, especially the young ones. Nevertheless, the system is an inventive and economic way to make use of nutrient-rich dairy water. At this field day, participants visited the orchards where lagoon water is being used in order to see the theory in action.

May 24, 2000
Livingston, Merced County
U.C. Merced Forum
Speaker Panel:

Roger Samuelson, SeniorAssociate to the Chancellor and Physical Planning, UC Merced
Karen Merritt, Director of Academic Planning, UC Merced
Bill Nicholson, Assistant Planning and Community Development Director, Merced County
Steve Johnson, The Nature Conservancy
Peter Koch, Rancher and Director of Merced County Farm Bureau
Mike Fuller, Postmodern Community Development
Mike Ruhland, CAFF Board Member

This important public forum was sponsored by CAFF. The building of the new UC campus in Merced is raising numerous issues relating to environmental impact, land use, water quality and preservation of the rural lifestyle. Questions raised at the forum included:

- Ground and surface waters are limited commodities, especially during drought years. What is the current source of water for the development of UC Merced, and how secure is the arrangement?
- Given the loss of California's farmland base in the Santa Clara Valley, the San Fernando Valley and elsewhere, the conversion of prime farmland to urban sprawl, the rapid rate of development in the Central Valley, and the growth-inducing impacts of the university, what leadership role can we expect from UC Merced to preserve our unique agriculture valley for future generations?
- The mission of the Sierra Nevada Research Institute includes sustaining and promoting the social well-being of our great valley. Given that this is an area of family farmers but increasingly inhabited by corporate agriculture, how will UC Merced with its vast resources and academic programs help address the plight of small farmers and their role in the valley?
- Most residents of the San Joaquin Valley will not attend UC Merced as student, staff or faculty. Yet the residents will experience the negative consequences of the university: loss of rangeland, farmland, open space, water and air quality, as well as a tax dollar increase. How will the university be accountable to members of the local community and what benefits will local residents derive from the presence of the university?

The forum generated a spirited and constructive discussion and debate.

June 22, 2000
Madera, Madera County
"Proper Use of Timing of Clinch for the Control of Ants in Almonds"
Paul Reising, Senior Product Development Specialist, Novartis
Clinch is a new ant bait that growers can use instead of the much harsher Lorsban. Paul Reiser, from Novartis, explained that Clinch only has 50 milligrams of active ingredient per acre compared to the recommended rate of 1816 grams per acre for Lorsban.

Growers learned how to use Clinch to control fire ants, which can be a huge concern, especially in young citrus. They defoliate and kill young trees and also plug sprinkler emitters by trying to store spurge seed in them.

One interesting fact is that Clinch does not affect sugar-loving ants. For example, Argentine ants are not attracted to the fatty bait. They have a symbiotic relationship with mealybugs on grapes. The ants will care for the mealybugs in exchange for the honeydew that they excrete. At the same time, the ants protect the mealybugs from parasitoids. Novartis is working on a bait similar to Clinch that is more attractive to these sugar lovers. The goal is for growers to reduce their use of organophosphate pesticides by using Clinch.

Percent of work completed (Task 9.1): 48%

9.2 Develop relationships with local community leaders, agencies, farmers and agriculture professionals.
Please refer to the attached Calendar of Biological Farming Events, April – June 2000 for an extensive list of CAFF staff outreach activities during this period. CAFF staff is in a continuous process of developing relationships with growers, agency personnel and other stakeholders in sustainable agriculture. Many of these relationships are developed during the field days, LFN

meetings, Chapter meetings, and meetings with agency personnel. Others develop at events such as the Regional Transportation Forum in Stanislaus County (May 30), Fund for Rural America Steering Committee meeting (May 4), Yolo/Solano County Advisory Committee Meeting (June 7) and the Heartland Conference in Turlock (June 10 – 11). CAFF representatives attended all these events. (See Attachment)

Pest Management Alliance (PMA) Projects

The Walnut and Almond Pest Management Alliance (PMA) projects are a primary avenue for CAFF's effort to transfer BIOS practices to the local level. These projects continue to be successful in educating growers about alternatives to pesticide use and reduced risk practices. CAFF plays a major role in the planning and organization of these projects. Both the almond and walnut PMAs sponsor demonstration orchards where participants conduct research and experiments to demonstrate that reduced risk practices can be ecological as well as cost effective. This quarter, Mark Cady and other CAFF staff attended PMA meetings on May 19, May 24, June 2 and June 14.

Percent of work completed (Task 9.2): 48%

9.3 Regional planning meetings

We reported on our annual regional planning meetings and sent corresponding deliverables in the last quarterly report, April 2000. Minutes from interim planning meetings are shown in attachments.

Percent of work completed (Task 9.3): 36%

9.4 Monthly LFN Newsletter

The Foghorn has been renamed *Farmer to Farmer*. The Communications and Programs Departments decided to rename the publication to better reflect the Biological Farming Program. The title "Farmer to Farmer" had been successfully used in the past for the technical information CAFF publishes and it was felt that this name accurately represents the philosophy behind the publication. *Farmer to Farmer* publishes summaries of LFN and BIOS meetings throughout the state and announces upcoming meetings. It is distributed to over 900 farmers and others in the Central Valley and 2,050 statewide.

Percent of work completed (Task 9.4): 48%

Task 9 Deliverables

- Lighthouse Farm Network event calendar
- 9.1 Meeting and field day announcements, flyers and sign-in sheets
- 9.2 Calendar of direct outreach activities to local organizations
- 9.3 Previously supplied
- 9.4 Monthly *Farmer to Farmer* (previously *The Foghorn*) newsletters for May and June 2000

Task 10: Implement BIOS transition — Begins June 2000

During this quarter, CAFF and National Fish and Wildlife Foundation began the negotiation process for Task 10. CAFF submitted a workplan to NFWF and currently it is being reviewed and is awaiting signatures. In the meantime, Mark Cady, Deputy Director of Programs attended an Almond PMA Steering Committee meeting in Modesto and a planning meeting in Colusa. At the

Almond PMA Steering Committee, members discussed and planned PMA activities in the coming quarter, such as field days and research opportunities. The Colusa County participants planned an upcoming field day for the summer of 2000.

In line with Subtask 10.6, CAFF submitted a proposal to the California Association of Winegrape Growers to take on the position of Project Director. This position involves working with winegrape growers throughout five regions in California in order to help institute a reduction in applications of sulphur and pre-emergent herbicides. This proposal is an effort to expand CAFF's work with the commodity boards.

Percentage of work completed (Task 10): 8%

Projected expenses for the coming quarter:

Month 1: $30,000 **Month 2: $30,000** **Month 3: $30,000**

Total for quarter: $90,000

QUARTERLY PROGRAMMATIC REPORT

Program Manager Spencer Shepherd Phone 415-778-0999 x 24
Project Manager Carl Mesick
CALFED Project # 97-N21
Quarter Ending June 30, 2000

Deliverables

	Name of Deliverable	Due Date	% of Work Complete	Date Deliverable Complete
Task 1				
Subtask a	Draft EMP	07-17-98	100%	07-17-98
Subtask a	Final EMP	1 month after receiving comments	100%	10-23-98
Subtask b	Access Agreements	10-20-98	100%	10-23-98
Subtask c	Agency Site Approval	10-20-98	100%	10-23-98
Subtask d	Quarterly Report	Quarterly	75%	07-05-00
Subtask e	Draft EGP Subcontract		100%	08-08-98
Subtask e	Final EGP Subcontract	Prior to beginning Task 4	100%	
Subtask e	Draft MBKCE Subcontract		100%	12-02-98
Subtask e	Final MBKCE Subcontract	Prior to completing Task 2	100%	12-18-98
Task 2				
Subtask 1	Notification of when applications have been submitted	5 months prior to beginning Task 4 Construction	100%	03-31-99
Subtask 2	Notification of when permits have been received	Prior to beginning Task 4 Construction	100%	08-15-99
Subtask 3	Copies of final environmental documentation & permits	Prior to beginning Task 4 Construction	100%	06-16-00
Task 3				
Subtask 1	Pre-Project Evaluation Report	05-31-00	93%	
Task 4				

Subtask 1	As-built streambed profiles	11-30-99	100%	11-23-99

Deliverables

	Name of Deliverable	Due Date	% of Work Complete	Date Deliverable Complete
Task 5				
Subtask 1	1st Year Post Project Evaluation Report	09-30-00	80%	
Task 6				
Subtask 1	2nd Year Post Project Evaluation Report	06-01-01	0%	

Narrative

1. Description of activities performed during the quarter, by task.

Task 1. All subtasks, except for the Quarterly Reports, have been completed. Carl Mesick Consultants produces the quarterly reports without charge for this task.

Task 2: Environmental Documentation and Permitting. All permits and licenses, except one, have been obtained and delivered to NFWF and CALFED. The last license obtained on June 13, 2000 formalized the verbal permission granted to Carl Mesick Consultants to work on Army Corps fee property for the purposes of restoration. Submission of this license to NFWF on June 16, 2000 completed this task.

Task 3: Pre-Project Habitat Evaluations. The field work for this task was completed during fall 1999. Data analyses have been completed and report production is ongoing. The deliverables are behind schedule because data analyses were made for Task 5 to prepare an abstract for the CALFED Science Conference, which was due June 23, 2000. It was also necessary to complete the collection of field data for Task 5 when streamflows declined to a workable level for the first time in four months on June 21, 2000. The draft report will be completed during the fourth quarter of FY2000.

Task 4: Gravel Placement. A final report that describes the gravel placement and includes contour maps showing where the 13,000 tons of gravel were placed at the 18 project sites was delivered to NFWF and CALFED on 23 November 1999. Delivery of this report completed this task.

Task 5: First-year Post-Project Habitat Evaluations. The final field survey was completed on July 5, 2000, after streamflows had

been reduced to a workable level on June 21, 2000. Data analysis will continue after the Task 3 report has been completed.

Task 6: Second-year Post-Project Habitat Evaluations. This task order has not been executed and no work has been done.

2. Problems and delays encountered by task.

   Task 2: None.
   Task 3: The submission of the deliverables, which are the draft and final reports, was delayed because work was done on Task 5 to prepare an abstract for the CALFED Science Conference, which was due June 23, 2000 and to complete the field data collection for Task 5.
   Task 4: None
   Task 5: None

3. Other issues or comments.

4. Please identify your projected expenses for each of the next three months in the following quarter to assist in the timing of State bond sales which fund this project.

   Month 1 $5,000, Month 2 $5,000 Month 3 $4,000.
   Total for quarter $14,000.

Title **Knights Ferry Gravel Replenishment Project**
Applicant: Carl Mesick Consultants
CALFED Project Number: 97-N21

Budget year: 2000
Statement Quarter: 3

Total Estimated Cost of Phase I:	$633,910
Funding from Federal Bay-Delta Account	$536,410
Stockton East Water District	$90,000
Carl Mesick Consultants In-Kind Services (Labor & Travel Provided for Task 1)	$7,500
Phase I schedule	3 years
Total Project Estimated Completion Date:	3 years

	PHASE I (Quarterly Budget)				**PHASE I (FY '00 Budget)**				**PHASE I (Three Year Budget)**			
	Budget	Accrued Expenditures	Variance	**	Budget	Accrued Expenditures	Remaining Balance	**	Budget	Accrued Expenditures	Balance to Complete	**
Task 1: Monitoring Plan, Site Approval & Permission, Quarterly Reports	$0	$0	$0	1	$0	$0	$0	1	$0	$0	$0	1
Schedule: FY '98 through FY '01 Percent Work Complete for Task 1: 98% 1a Development of Ecological Monitoring Plan 1b Agreements to Access Project Sites 1c Site Approval by Agencies 1d Deliver Quarterly Reports 1e Draft and Final Subcontract Review												
Task 2: Environmental Documentation and Permitting	$480.00	$480.00	$0.00		$480.00	$480.00	$0.00		$25,598.59	$25,598.59	$0.00	
Schedule: FY '98 through FY '00 Percent Work Complete for Task 2: 100%												
Task 3: Pre-Project Habitat Evaluations	$5,980	$5,980.00	$0.00		$8,171.50	$6,380.00	$1,791.50		$36,000.00	$34,208.50	$1,791.50	
Schedule: FY '98 through FY '00 Percent Work Complete for Task 3: 93% (** 2)												
Task 4: Gravel Placement	$0.00	$0.00	$0.00		$6,803.45	$6,803.45	$0.00		$395,097.92	$395,097.92	$0.00	
Schedule: FY '98 through FY '99 Percent Work Complete for Task 4: 100%												
Task 5: First Year Post-Project Habitat Evaluations	$10,980.00	$10,977.41	$2.59		$36,250.45	$24,658.67	$11,591.78		$45,550.00	$33,958.22	$11,591.78	
Schedule: FY '99 through FY '00 Percent Work Complete for Task 5: 80% (**2)												
Task 6: Second Year Post-Project Habitat Evaluations	$0	$0	$0		$0	$0	$0		$26,000	$0	$26,000	
Schedule: FY '01 through FY '01 Percent Work Complete for Task 6: 0%												
10% Contingency									$8,163		$8,163	
Phase I Total:	**$17,440**	**$17,437**	**$3**		**$51,705**	**$38,322**	**$13,383**		**$536,410**	**$488,863**	**$47,547**	

**** Explanation of the Budget :**

1 In-Kind Services: Carl Mesick Consultants is contributing all labor and travel to complete Task 1

2 The Task 3 and Task 5 budgets are jointly funded from the State Bay-Delta Account and from the Stockton East Water District and the Percent Work reflects the total budget. The Stockton East Water District t budget for Task 3 is $30,000 for which $26,208 has been invoiced and their total budget for Task 5 is $30,000 for which $26,483 has been invoiced.

QUARTERLY PROGRAMMATIC REPORT

Program Manager Spencer Shepherd Phone 415-778-0999 x 24
Project Manager Jim Staker
CALFED Project # 98-N01
Quarter Ending December 31, 1999

Deliverables

	Name of Deliverable	Due Date	% of Work Complete	Date Deliverable Complete
Task 1	Data Col. TM*	Nov 30	100	Jan 3, 2000
Task 2	Base Map	Dec 31	40	Estimated Jan 31, 2000
Task 3	Geotech Report	Dec 31	30	Estimated Jan 31, 2000
Task 4	Alternatives TM	Nov 30	0	Jan 3, 2000
Task 5	Selected Alt. TM	Nov 30	0	Jan 3, 2000
Task 6	Report	Nov 30	0	Jan 3, 2000
Task 7	Quarterly Reports	Nov 30	20	Jan 3, 2000

*TM = Technical Memorandum

Narrative

1. Description of activities performed during the quarter, by task.

Task 1 – Performed site visit to review site conditions and take photographs for future reference. Copied/reviewed pump station design drawings. Collected/analyzed water demand/pumping records. Visited two other fish screens to discuss design problems/solutions with screen operators.

Task 2 – Downloaded 2 foot topographic mapping form US Army Corps of Engineers web site. Integrated mapping into other previously prepared mapping. Surveyed pumpstation, buildings, and structures at project site.

Task 3 – Identified a geotechnical engineer with extensive experience aroun Sacramento River levees. Prepared subcontract for geotechnical engineer. Began geotechnical evaluation for preliminary foundation report.

Task 7 – Performed project status and budget tracking.

2. Problems and delays encountered by task.

Task 2 – Experienced a delay in completing the survey of the Pump Station site due to nonavailability of survey crew.

3. Other issues or comments.

None

4. Please identify your projected expenses for each of the next three months in the following quarter to assist in the timing of State bond sales which fund this project.
   Month 1 $15,000 Month 2 $25,000 Month 3 $25,000 Total for quarter $65,000

Title Reclamation District 2035 Fish Screen Project
Applicant: RD 2035 - James Staker, General Manager
CALFED Project Number: 98N01

Budget year: 2000
Statement Quarter: 1

Total Estimated Cost of Phase I:	$115,000
Funding from Federal Bay-Delta Account	100,000
In-Kind Services	15,000
Phase I schedule	1 year
Total Project Estimated Completion Date:	1 years

			PHASE I (First Quarterly Budget, Oct - Dec)				**PHASE I** (FY '2000 Budget)				**PHASE I** (Three Year Budget)			
			Budget	Accrued Expenditures	Variance		Budget	Accrued Expenditures	Remaining Balance		Budget	Accrued Expenditures	Balance to Complete	
Task 1:	Data Collection and Site Visit		$5,000	$6,765	($1,765)	**	$5,000	$6,765	($1,765)	**	$5,000	$6,765	($1,765)	**
	Schedule: FY '98 through FY '99													
	Percent Work Complete for Task 1:	100%												
Task 2:	Site Surveying		$4,000	$2,309	$1,691		$8,000	$2,309	$5,691		$8,000	$2,309	$5,691	
	Schedule: FY '98 through FY '99													
	Percent Work Complete for Task 2:	40%												
Task 3:	Geotechnical Investigation		$4,000	$232	$3,768		$8,000	$232	$7,768		$8,000	$232	$7,768	
	Schedule: FY '98 through FY '99													
	Percent Work Complete for Task 3:	30%												
Task 4:	Fish Screen Alternatives Evaluation		$0	$0	$0		$55,000	$0	$55,000		$55,000	$0	$55,000	
	Schedule: FY '98 through FY '99													
	Percent Work Complete for Task 4:	0%												
Task 5:	Selected Alternative		$0	$0	$0		$10,000	$0	$10,000		$10,000	$0	$10,000	
	Schedule: FY '98 through FY '99													
	Percent Work Complete for Task 5:	0%												
Task 6:	Feasibility Report		$0	$0	$0		$8,000	$0	$8,000		$8,000	$0	$8,000	
	Schedule: FY '98 through FY '99													
	Percent Work Complete for Task 6:	0%												
Task 7:	Project Management		$1,000	$529	$471		$6,000	$529	$5,471		$6,000	$529	$5,471	
	Schedule: FY '98 through FY '99													
	Percent Work Complete for Task 7:	20%												
Phase I Total:			**$14,000**	**$9,835**	**$4,165**		**$100,000**	**$9,835**	**$90,165**		**$100,000**	**$9,835**	**$90,165**	

We budget to the Sub-task level only if they are active during the Quarter in question. If a SUBTASK is complete, the SUBTASK cost rolls-up into the Task level.

**** Explanation of Significant (greater than $1,000) Variance in Budget : (if any)**

Task 1 The data collection effort required more time than originally budgeted.
Task 2 The surveyor was unavailable until January, so his billings have been delayed.
Task 3 The geotechnical subconsultant has not submitted an invoice yet.

QUARTERLY PROGRAMMATIC REPORT

Program Manager: Spencer Shephard Phone: 415-778-0999 x24
Project Manager: Guy Phillips
CalFed Project #: Work Authority #1469-85, Project #98-N02
Quarter Ending: June 30, 2000

Deliverables

Name of Deliverable	Due Date	% of Work Complete	Date Deliverable Submitted/Complete
Task 1: Document the Opportunity	May 1, 1999	100%	September 30, 1999
Task 2: Inventory Sites	July 1, 1999	100%	September 30, 1999
Task 3: Develop Template	Sept. 1, 2000	95%	July 31, 2000
Task 4: Implementation Mechanism	Oct. 1, 1999	100%	September 30, 1999
Task 5: Demonstrate Mechanism	Nov. 1, 1999	100%	September 30, 1999
Task 6: Workshops	Sept. 1, 2000	50%	August 30, 2000
Task 7: Advisory Committee	Ongoing	80%	August 30, 2000
Task 8: Peer Reviews & Workshop	Sept. 1, 2000	50%	August 30, 2000
Task 9: Administration & Reporting	Ongoing	80%	

Narrative

1. Description of activities performed during the quarter, by Task.

Task 1: **Document the Opportunity:** This task is complete.

Task 2: **Inventory Sites:** This task was completed in earlier quarters.

Task 3: **Develop Template:** This task is planned to be completed in July, 2000.

Task 4: **Implementation Mechanism:** This task was completed in an earlier quarter.

Task 5: **Demonstrate Mechanism:** This task was completed in an earlier quarter.

Task 6: **Workshops:** Workshops are planned for August, 2000.

Task 7: **Advisory Committee:** The Advisory Committee reviews are planned to be completed in August, 2000.

Task 8: **Peer Reviews & Workshop:** The Advisory/Peer Review Committee reviews will be completed in August, 2000.

Task 9: **Administration & Reporting:** Ongoing project administration and reporting has been performed as required.

2. Problems and delays encountered by Task.

Task 1:	**Document the Opportunity:**	This task is complete.
Task 2:	**Inventory Sites:**	This task is complete.
Task 3:	**Develop Template:**	Completion of the template is planned for July,2000.
Task 4:	**Implementation Mechanism:**	This task is complete.
Task 5:	**Demonstrate Mechanism:**	This task is complete.
Task 6:	**Workshops:**	The workshops are planned for August, 2000.
Task 7:	**Advisory Committee:**	Scheduled to complete in August, 2000.
Task 8:	**Peer Reviews & Workshop:**	This task is scheduled for completion in August, 2000.
Task 9:	**Administration & Reporting:**	No problems expected completing this task.

3. Other issues or comments. None.

4. Please identify your projected expenses for each of the next three months in the following quarter to assist in the timing of State bond sales which fund this project.

Month 1: $ 9,000.00 Month 2: $ 9,450.00 Month 3: $ -0-

Total for quarter: $ 18,450.00

QUARTERLY PROGRAMMATIC REPORT

Program Manager: Spencer Shepherd Phone: 415-778-0999 ext. 24
Project Manager: William T. Mitchell
CALFED Project: 98-N03
Quarter Ending: June 30, 2000

Task	Deliverable	Due Date	% Work Complete	Date Deliverable Complete
Task 1:				
Coordination	1) Draft Subcontract	9/1/99	0%[1]	6/10/99
	2) Final Subcontract			6/10/99
Task 2:				
Fish Trap Design,	1) Draft Design Drawing	9/1/99	100%	10/13/99
Construction, and Testing	2) Final Design Drawing	9/1/99	100%	01/30/00
Task 3:				
Fish Trapping and	1) Draft Memo-Field Protocols	See f.n. 2	0%	
Data Collection	2) Final Memo-Field Protocols	See f.n. 2		
Task 4:				
Scale/Otolith Preparation [3]			0%	
Task 5:				
Scale/Otolith Analysis[3]	1) Draft Memo-Scale Protocols	See f.n. 1	0%	
	2) Final Memo-Scale Protocols	See f.n. 1		
Task 6				
Data Storage and Analysis	1) Data Available on J&S's	As	0%	
Task 7				
Data Summary	1) Data Summaries	As	0%	
Task 8				
Report Preparation	1) Quarterly Progress Reports	10/10/99-7/10	0%	
	2) Annual Presentations	8/31/00, 8/31/	0%	
	3) Final Report	8/31/02	0%	

1 No charges were made for subcontract preparation and processing
2 To be prepared after permit conditions are established by NMFS
3 Task Order to be negotiated after permit conditions are established by NMFS

QUARTERLY PROGRAMMATIC REPORT

Activities Performed

Task 1. Coordination - No activities under this task were conducted this quarter because of delays described below.

Task 2. Fish Trap Design, Construction, and Testing - Fish trap was constructed and is ready for installation and testing.

Tasks 3-8. No activities under these tasks were conducted during this quarter. Regulatory approvals, as described below, must be received before initiating Tasks 3-8.

Problems and Delays

Trapping and data collection activities have not begun yet because of additional regulatory requirements imposed by the U.S. Army Corps of Engineers (Corps) for proposed steelhead trapping activities at Daguerre Point Dam. Jones & Stokes is currently assisting the Corps in preparing a request for consultation with the National Marine Fisheries Service (NMFS) in accord with Section 7 of the federal Endangered Species Act (ESA), and a Categorical Exclusion in accord with the National Environmental Policy Act (NEPA).

Other Issues or Comments

J&S submitted an application to NMFS in August 1999 requesting a scientific research permit in accord with Section 10(a)(1)(A) of the federal ESA. This application is currently being reviewed by NMFS following recent publication of the final 4(d) rule for Central Valley steelhead. Dan Logan of NMFS informed us by letter, dated December 17, 1999, that the final rule would not restrict ongoing scientific research affecting Central Valley steelhead for up to 6 months after its effective date, provided that an application for a permit for scientific purposes or to enhance
the conservation or survival of the species is received within 30 days from after the effective date of a final rule. Consequently, a Section 10 permit is not required at this time. We are currently authorized to conduct steelhead trapping activities under the terms and conditions of a Memorandum of Understanding with the California Department of Fish and Game for incidental capture of state-listed spring-run chinook salmon (attached). The Section 10 process, along with the existing CESA MOU, should expedite the Corps' Section 7 and NEPA process so that we can begin trapping by September 1, 2000.

Projected Expenses

Month 1: $1,000 Month 2: $1,000 Month 3: $5,000 Total for Quarter: $7,000

Quarterly Fiscal Report

Project Title: Life History and Stock Composition of Steelhead Trout in the Lower Yuba River
Applicant(s): Yuba County Water Agency
CALFED Project Number: 98-N03

Budget year: 2000
Statement Quarter: 3

Total Estimated Cost of Phase I:	$300,000
CALFED/EPA Grant funds	120,000
Non-CALFED/EPA funds	180,000
Contributed goods & services	0
Phase I schedule	3 years
Total Project Estimated Completion Date:	3 years

	Quarterly Budget				**FY '00 Budget**			**Three Year Budget**		
	Budget	Accrued Expenditures	Variance	**	Budget	Accrued Expenditures	Remaining Balance	Budget	Accrued Expenditures	Balance to Complete
Task 1: Coordination	$85	$0	$85	1	$1,021	$0	$1,021	$3,064	$0	$3,064
Schedule: FY '99 through FY '02 Percent Work Complete for Task 1: 0%										
Task 2: Fish Trap Design, Construction, and Testing				2						
Schedule: FY '99 through FY '00 Percent Work Complete for Task 2: 14%										
Task 3: Fish Trapping and Data Collection	$1,824	$0	$1,824	1	$21,891	$0	$21,891	$54,728	$0	$54,728
Schedule: FY '99 through FY '02 Percent Work Complete for Task 3: 0%										
Task 4: Scale and Otolith Preparation	$287	$0	$287	1	$3,444	$0	$3,444	$8,610	$0	$8,610
Schedule: FY '99 through FY '02 Percent Work Complete for Task 4: 0%										
Task 5: Scale and Otolith Analysis	$877	$0	$877	1	$10,527	$0	$10,527	$31,581	$0	$31,581
Schedule: FY '99 through FY '02 Percent Work Complete for Task 5: 0%										
Task 6: Data Storage and Analysis	$209	$0	$209	1	$2,512	$0	$2,512	$7,536	$0	$7,536
Schedule: FY '99 through FY '02 Percent Work Complete for Task 6: 0%										
Task 7: Data Summary and Schedule	$156	$0	$156	1	$1,868	$0	$1,868	$5,605	$0	$5,605
Schedule: FY '99 through FY '02 Percent Work Complete for Task 7: 0%										
Task 8: Report Preparation and Presentation	$0	$0	$0		$2,959	$0	$2,959	$8,876	$0	$8,876
Schedule: FY '99 through FY '02 Percent Work Complete for Task 8: 0%										
Phase I Total:	**$3,438**	**$0**	**$3,438**		**$44,222**	**$0**	**$44,222**	**$120,000**	**$0**	**$120,000**

**** Explanation of Variance in Budget :**

1 Task has been delayed pending Section 7 and NEPA compliance requirements
2 Non-CALFED expenditure (task funded solely by YCWA)

QUARTERLY PROGRAMMATIC REPORT

Program Manager: Spencer Shepherd, phone: (415) 778-0999, email: shepherd@nfwf.org
Project Manager: Joseph J. Cech, Jr., phone: (530) 752-3103, email" jjcech@ucdavis.edu
CALFED Project #: 99-N02
Quarter Ending: July 1, 2000

Deliverables

This quarterly report covers the period from April 1, 2000 - June 30, 2000 (3 months).

Deliverable	Due Date	% Completed	Date Deliverable Complete
Task 1 (Report on operation, maintenance, and calibration of the Fish Treadmill)	June 30, 2001	33%	
Task 2 (Report on biological experiments using the Fish Treadmill)	June 30, 2001	33%	
Task 3 (Report on fish collection)	June 30, 2001	33%	
Task 4 (Draft Biological Monitoring/Research Plan)	February 16, 2000	100%	April 10, 2000
Task 5 (Quarterly fiscal and programmatic reports)	June 30, 2001	40%	
Task 6 (Final technical reports)	May 30, 2001	0%	

Narrative

Task 1: Fish Treadmill operation, maintenance, and calibration (M. L. Kavvas, Department of Civil and Environmental Engineering, UC Davis, Task Leader)

The Fish Treadmill was operated for 46 experiments during the period from April 1-June 30, 2000. All Fish Treadmill variables (e.g., Fish Treadmill water temperature and dissolved oxygen) were within acceptable ranges (as defined by the Biological Monitoring/Research Plan, BM/RP) but, for three experiments, other QAQC criteria (e.g., fish holding tank water temperature) were unacceptable (see Task 2 below). Fish Treadmill hydraulics and water quality data were checked and reported in monthly QAQC reports to the QAQC officer. No errors in the recorded data sheets were found. Data on discharge water (quality and quantity) were reported to the California Regional Water Resource Control Board (CRWRCB).

On June 19, 2000, the underground sump was drained, cleaned and refilled with clean well water. Sump water temperature was adjusted from the winter/spring seasonal experimental temperature (12EC) to the summer/fall experimental temperature, 19EC.

Fish Treadmill maintenance performed during this quarter included sump water replacement, regular maintenance for the heating/cooling system, and repainting the Fish treadmill test channel floor. The ultrasonic flow meter used to measure pump discharge was recalibrated (pump discharge rate is manipulated to control and measure experimental approach velocity in the apparatus). Additional engineering services provided by the engineering group included reinforcing the fish holding facility support structure to accommodate a larger head tank (for enhanced temperature control) and set-up of an improved cooling system for fish holding facility.

<u>Task 2</u>: Biological Experiments (J. J. Cech, Jr., Department of Wildlife, Fish, and Conservation Biology, UC Davis, Task Leader)

During this quarter, 46 biological experiments were conducted, with 43 experiments (steelhead, <4 cm SL, 21 experiments; chinook salmon, 4-6 cm SL, 5 experiments; chinook salmon, 6-8 cm SL, 16 experiments; and, green sturgeon, 4-6 cm SL, 1 experiment) satisfying all pre- and post-experiment conditions and experimental protocols as defined by the BM/RP. Experiments using 6-8 cm SL fish were also used for physiological stress response measurements. Plasma samples from some of these fish were frozen for later analysis.

Computer-assisted motion analyses (using Peak Performance Technologies, Inc. motion analysis system) of video tape records from experiments conducted earlier this year was completed for 12 experiments with splittail and chinook salmon.

Data entry and analyses continued for experiments conducted earlier this year and during the previous year. Final summary descriptive statistics for screen contact rates were generated for all completed experiments with chinook salmon and splittail. Health assessment, visual observation, blood plasma parameters and motion analysis data from previous experiments with delta smelt, chinook salmon, splittail, and steelhead were updated and checked for accuracy (per BM/RP QAQC requirements).

Biological experiments using the Fish Treadmill were suspended from May 22-June 22, due to renovations of the indoor Hydraulics Laboratory fish holding facility. A new 4 HP chiller was installed, as well as a new 1,000 gallon head tank. The test channel in the Fish Treadmill was repainted, regular maintenance done, and the sump was cleaned and water changed and adjusted to the new experimental temperature, 19EC.

<u>Task 3</u>: Fish Collection (G. Aasen, California Department of Fish and Game, Stockton Bay/Delta Office, Task Leader)

During this quarter, we collected 600 steelhead (fry) and 817 chinook salmon (parr) from Coleman National Fish Hatchery. As required by the BM/RP, these fish were subjected to prophylactic treatments for 10 days and held for another 10 days before being used for biological experiments.

<u>Task 4</u>: Biological Monitoring/Research Plan (J. J. Cech, Jr., Department of Wildlife, Fish, and Conservation Biology, UC Davis, Task Leader)

This task was completed during the previous quarter.

<u>Task 5</u>: Quarterly reports (J. J. Cech, Jr., Department of Wildlife, Fish, and Conservation Biology, and M. L. Kavvas, Department of Civil and Environmental Engineering, UC Davis, Task Leaders)

This is the second quarterly report. It covers the period of April 1, 2000 - June 30, 2000 (3 months).

<u>Task 6</u>: Final technical reports (J. J. Cech, Jr., Department of Wildlife, Fish, and Conservation Biology, and M. L. Kavvas, Department of Civil and Environmental Engineering, UC Davis, Task Leaders)

Final technical reports for the hydraulic and biological studies using the Fish Treadmill will be submitted May 30, 2001.

Projected Expenses for the Next Three Months:
The estimated costs for next three months (April 1, 2000 - June 1, 2000 are $226,624. This figure is based on projected costs for Task 1,2, and 5 costs for 3 months (total = $145,780) and for 7.5 months of Task 3 (Fish Collection, California Department of Fish and Game).

Summary of expenses (April 1, 2000 - June 30, 2000) and to date (first 4.5 months of project).

Task	Quarter Budget	Quarter Expenditures	Quarter Variance	Project budget	Project expenditures	Balance	Explanation
Task 1	60,738	60,738	0	276,082	91,107	184,975	2nd quarter
Task 2	82,530	82,155	375	371,384	123,420	247,964	2nd quarter
Task 3	0	0	0	145,520	0	145,520	funds late
Task 4	0	0	0	4,898	4,898	0	completed
Task 5	2,512	2,512	0	12,558	5,023	7,534	2nd of 5 completed
Task 6	0	0	0	12,558	0	12,558	N/A

QUARTERLY PROGRAMMATIC REPORT

Program Manager Spencer Shepherd Phone 415-778-0999 x 24
Project Manager Eliška Rejmánková Phone 530-752-5433 erejmankova@ucdavis.edu
Dept. of Environmental Science & Policy
University of California, Davis
One Shields Avenue
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CALFED Project # 99-N05
Reintroduction of Soft Bird's Beak to Restored Habitat in Suisun Marsh
Quarter Ending June 30, 2000

Deliverables

	Name of Deliverable	Due Date	% Work Complete	Date Deliverable complete
Task 1. Project Management	Qtr. Fiscal Report	July 10, 2000	100	June 30, 2000
	Qtr. Programmatic Report	July 10, 2000	100	June 30, 2000
	Phase I Progress Report	July 10, 2000	100	June 30, 2000
Task 2.a. Field Data Collection	Map & List of Sites Evaluated, List of Samples Collected & Measurements	July 10, 2000	100	June 30, 2000
Task 2.b. Lab Analysis	List of Samples and Parameters Analyzed	July 10, 2000	100	June 30, 2000
2.c. Data Evaluation	Graphical Displays of Preliminary Data Analyses, and Preliminary Restoration Screening Criteria	July 10, 2000	100	June 30, 2000

Narrative: CALFED 99-NO5 QUARTERLY PROGRAMMATIC REPORT
Reintroduction of Soft Bird's Beak to Restored Habitat in Suisun Marsh

I. I. Description of activities performed during the quarter, by task.

Introduction. The goal of this study is to provide critical ecological data to facilitate rare plant restoration, as a contribution towards CALFED objectives for improved ecosystem quality through native species recovery and conservation. The recovery of rare plants often requires the creation of new populations in order to decrease extinction risk. This project addresses recovery of soft bird's beak (*Cordylanthus mollis* ssp. *mollis*), an endangered plant endemic to Suisun and North Bay high tidal marsh. Soft bird's beak is an annual hemiroot parasitic herb of the figwort/snapdragon family. Natural populations of soft bird's beak have been confirmed from nine sites in Suisun and North Bay marshes, and well over 90% of the remaining plants are found in Suisun Marsh (Ruygt 1994). Historic accounts indicate this species is an anthropogenic rarity that is now endangered due to habitat loss and fragmentation (U.S. Fish & Wildlife Service 1995). Understanding habitat requirements critical to this species will aid in the recovery of soft bird's beak and other sensitive species sharing historic tidal marsh habitat including California black rail, Suisun thistle, salt marsh harvest mouse, and Suisun shrew.

TASK 1. Project Management. Project management activities began with preparation of the scope of services for the contract. Contract negotiations between the University of California and CALFED delayed initiation of this work until the second quarter. During this delay, the project manager obtained the necessary environmental permits for this research. We obtained a permit from the California Department of Fish and Game that authorizes us to conduct research on a state-designated endangered, threatened or rare plant and allows us to work on Department of Fish and Game property in Suisun and Napa Marsh. We also obtained a scientific collection permit from California State Parks for work at Southampton Marsh/Benicia State Recreation Area. Through informal consultation with U.S. Fish and Wildlife Service, it was determined that a federal endangered species permit would not be required for this work.

A Ph.D. Candidate (student post-graduate researcher), B.S./Level 1 post-graduate researcher (non-student), laboratory technician, and undergraduate field/lab assistant were hired, trained, and supervised to implement Phase I of the project. The quarterly financial and programmatic reports, and Phase I report were prepared under the direction of the project manager. All project management activities were provided through cost share arrangement with no charge to the CALFED contract.

TASK 2a. Field Data Collection. The first objective of this project is to investigate habitat factors critical to the endangered plant soft bird's beak. Historical, logistical, physical, and biological data gathering were required to accomplish this task.

Historical data gathering included a literature search, herbaria record searches, and resource management agency database searches to determine historic soft bird's beak occurrence sites. Information regarding historic habitat data and limited prior research on the species was reviewed. Logistical data gathering included property ownership of potential evaluation and restoration sites, rare plant research permits, biological collection permits, access, and safety concerns. Evaluation of all of these sources of information led to the formulation of a field sampling strategy of occupied soft bird's beak habitat, and selection of a preliminary restoration site for the testing of reintroduction criteria.

There are nine extant populations of soft bird's beak known in the San Francisco Estuary. Two sites were eliminated from Phase I evaluation due to safety/access concerns (Pinole and Point Edith Marsh). The Concord Naval Weapons Station population was eliminated due to security restrictions/access problems. A small population persists near McAvoy Harbor which was excluded from Phase I screening because of private property access restrictions, and conservation concerns. We completed a detailed habitat characterization at five occupied sites: Hill Slough East, Hill Slough-Potrero, and Joice Island in Suisun Marsh; Southampton Marsh at Benicia State Recreation Area, and Fagan Slough Ecological Reserve in Napa Marsh (**Map Attachment** and **Table 1**). The Spring Branch tidal marsh restoration site at Rush Ranch in Suisun Marsh was also evaluated as a potential reintroduction site (**Map Attachment** and **Table 1).**

Randomly dispersed, replicated quadrats in the unique intertidal vegetation zone supporting soft bird's beak, and in distinct vegetation zones immediately above and below this zone along the tidal gradient were measured to describe vegetation pattern and physical conditions within the salt marsh. **Tables 2 and 3** summarize total in situ habitat field measurements and field samples collected for laboratory analyses. Plant species presence, percent plant cover by species, canopy height, and percent gaps were measured at maximum summer growth. Below canopy photosynthetically active radiation (PAR) was measured just prior to spring 2000 seedling emergence. Soil samples were collected for laboratory evaluation. Distance from tidal source and tidal maxima were measured, and relative elevation was determined for each population. Local climate data was collected for future analyses. Point count observations of bird species and incidental natural history observations were recorded at each sampling site.

TASK 2b. Lab Analyses. A summary of all lab analyses conducted during Phase I of the project is presented in **Table 4**. A total of 6,630 samples were analyzed.
Soil samples were evaluated for bulk density, water content, organic matter, salinity, anions, cations, sodium absorption ratio, total nitrogen, and total phosphorus, and total carbon. Bulk density and soil water content analyses required that a known volume of soil be collected with an undisturbed core sampler. Soil was weighed before and after oven drying to obtain wet weight and oven dry weight. Bulk density was then determined as grams of oven dry soil per volume of soil. In turn, soil water content was calculated as the ratio of water mass to dry soil mass. For analyses of organic matter and total N, P, and carbon, soil was collected from each site, ground, sieved, oven dried at 80 degrees C, and stored in sealed containers. A Wiley Cutting Mill was acquired for soil and plant tissue grinding (see equipment invoice, financial reports). Organic matter content was analyzed by the loss-on-ignition

method. Total nitrogen and total carbon concentrations were assessed with a CHN analyzer. Total phosphorus was determined by changing organic and mineral phosphorus into orthophosphate, and then reading concentrations by spectrophotometer.

Soil salinity, specific ion concentrations, and sodicity of the soil were determined by analyzing soil solution extracts. Following standard soil saturation extract methodology (Rhoades 1982), soil solutions were vacuum-drawn from saturation pastes placed in Buchner filter funnels. A temperature compensating specific conductance meter was used to determine salinity of saturation extracts. If salinity levels were too high for direct ion analysis, extracts were diluted prior to cation and anion determination. Cations (Ca^{+2}, Mg^{+2}, K^{+}, Na^{+}) were analyzed by atomic absorption. Anions (Cl^{-}, SO_4^{-2}, PO_4^{-3}) were measured with an ion chromatographic analyzer. Sodium absorption ratio, a ratio of sodium to calcium and magnesium concentrations, was calculated as a comparative index of sodicity.

TASK 2c. Data Evaluation. Standard descriptive statistical techniques were used for preliminary data evaluations. Physical and biological parameters which were distinctively different in the presence of soft bird's beak compared to adjacent intertidal zones outside of its narrow range appear to be soil organic matter content, photosynthetically active radiation levels (PAR), plant canopy height, and the presence of salt marsh dodder (*Cuscuta salina*) which was the most common plant associate of soft bird's beak throughout its range (**Figures 1-4**). The intertidal pattern of soil organic matter, PAR, and plant canopy height at the Rush Ranch restoration site appear to compare favorably with the historically occupied sites (**Figure 5**).

A variety of multivariate and cluster analysis techniques were examined for preliminary evaluation of key environmental parameters that may have the strongest influences on the distribution of soft bird's beak. PC-ORD (McCune & Mefford 1999) and SYNTAX (Podani, 1995) were used to analyze the multivariate species and environmental data.

Cluster analysis was performed to examine the distinctiveness of vegetation zones observed in the field. A variety of agglomerative clustering techniques were performed with average linkage clustering. The 1 – Jaccard Dissimilarity Index was calculated for a look at distance cluster analysis. This index was calculated as the proportion of sampling units that occur relative to the total number of sampling units with at least one species from species-absence data arranged in 2X2 contingency tables (Ludwig & Reynolds 1988). The 1 – Jaccard method emphasizes rare species. Average linkage clustering was used as dissimilarity between clusters is computed from unweighted pair groups from dissimilarity, which is the recommended method for hierarchical classification of vegetation (Gauch 1982).

Figures 6 and 7 are dendrograms constructed to display results of the clusters by sampling units. These figures suggest that sampling units identified as high marsh (above *Cordylanthus*), *Cordylanthus* zone (lower high marsh), and below Cordylanthus (middle marsh) elevational zones do consist of unique vegetation assemblages. However, vegetation in the zone below *Cordylanthus* at Napa Marsh was more similar to the high marsh sites in Suisun Marsh than other identified sites at intertidal ranges below *Cordylanthus* occurrence. Jaccard and CHORD ED clusters were also plotted as dendrograms to look at plant species clusters at soft bird's beak occupied sites (**Figure 8**). CHORD Euclidean

Distance measures by average linkage standardizes Eucledian distance by putting greater importance on the relative proportions of species in sampling units and correspondingly less importance on absolute cover. Both Jaccard Dissimilarity and CHORD ED agglomerative clustering recognized the close association between soft bird's beak (COMO) and salt marsh dodder (CUSA). Jaccard clusters also classified fathen (*Atriplex triangularis*, ATTR) and saltgrass (*Distichlis spicata*, DISP) as close associates of soft bird's beak. CHORD ED was an improved reflection of field observations as this method recognized slender aster (*Aster subulatus*, ASSU), seaside plantain (*Plantago maritima*PLMA), fathen (*Atriplex triangularis*, ATTR), knotweed (*Polygonum arenastrum*, POAR), seaside arrowgrass (*Triglochin maritima*, TRMA), salt marsh dodder (*Cuscuta salina* CUSA), western marsh rosemary (*Limonium californicum* LICA), and soft bird's beak (*Cordylanthus mollis* COMO) and saltgrass (*Distichlis spicata*) as a unique association. These agglomerative clustering results are preliminary, but show promise as a useful tool in the evaluation of plant community composition of evolving restoration sites before experimental reintroduction of the endangered plant is attempted.

Multivariate ordination analyses were then applied to soft bird's beak occupied sites and the Rush Ranch restoration site to see if the vegetation species were distributed along detectable environmental gradients. Cluster analysis shown in Figures 6 and 7 confirm the distinctiveness of sampling units across intertidal elevational zones. Detrended Correspondence Analysis (DECORANA) was the first method we applied to computationally place species, environmental data, and sample ordination scores in one integrated analysis. Detrended correspondence analysis was selected because it removes the arch effect and rescales axes to remove compression near the ends as these effects can be a problem when there are many sampling units with empty data cells (i.e. in this case, absence of many plant species from various quadrats).

Figure 9 and shows preliminary results of detrended correspondence analysis of 43 plant species and environmental variables at 75 plots from within soft bird's beak occupied tidal marshes. **Figure 10** is an ordination plot of DECORANA results from the 17 species and environmental variables from 21 plots at the Rush Ranch screening site. The dark lines on these scatterplots identify important environmental gradients, and the length of the line represents the strength of the gradient factor. DECORANA ordination revealed some important gradients within this community. Photosynthetically active radiation, soil bulk density, soil saturated conductivity, sodium absorption ratio, and soil potassium levels were all elevated in the stressful upper high marsh (above mean higher high water elevation) above the zone of soft bird's beak occurrence. The ordination also emphasized the increase in soil water content, soil organic matter, plant canopy height, and total nutrients (nitrogen, phosphorus, and total carbon) within sampling units below the zone supporting soft bird's beak in occupied tidal marshes. DECORANA ordination suggests the strongest gradients associated with soft bird's beak habitat are with PAR and canopy height, with soil bulk density and soil phosphorus gradients as the next most important indicators. DECORANA ordination of data from the Rush Ranch screening site revealed the same significance of elevated soil bulk density and saturation extract conductivity in the highest elevation plots, with increasing soil organic matter, soil water content, and maximum canopy height, total nitrogen, phosphorus, and carbon below the potential soft bird's beak reintroduction zone.

These results support our initial hypothesis that the Rush Ranch restoration site may have developed to the point where soft bird's beak reintroduction may be feasible.

Canonical correspondence analysis (CCA) was also attempted, as this direct gradient analysis technique often provides an improvement over indirect methods such as detrended correspondence analysis because species composition is directly and immediately related to measured environmental variables (ter Braak 1987, Palmer 1993). The underlying assumption of CCA is that species frequency or abundance is a unimodal function of position along environmental gradients. Results of the soft bird's beak occupied sites and Rush Ranch screening site are presented in **Figures 11 and 12**. **Figure 11** ordinates the vegetation of soft bird's beak occupied sites along PAR, soil bulk density, salinity, water content, soil organic matter, and nutrient gradients. PAR, soil bulk density, and soil salinity are all elevated above the zone of soft bird's beak occurrence and decrease with intertidal elevation, while soil organic matter, soil water content, and total nutrient increase with decreasing marsh elevations. CCA results confirm the same gradients detected with DECORANA, but do not show as dramatic a difference in strength of the gradients revealed by DECORANA. These ordination results should all be considered preliminary, and we will continue to explore the biological and physico-chemical factors associated with these rare plants in our attempt to contribute to restoration success.

Preliminary restoration screening criteria for restoration sites include the logistical, historical, biological, and physical factors. Our understanding of the significance of these factors will improve as we continue focused research in Phase II of this project. We intend to further explore environmental relationships with rare plant abundance, and will also examine biological associations such as pollination ecology and seed predation effects along with planned experimental reintroduction and comparative demographic monitoring. These investigations are designed to yield results directly applicable to adaptive management for restoration success.

II. II. Problems and delays encountered by task.

III.

Task 1. Project Management: delays in finalizing the contract which was projected to be initiated in October 1999 was the major problem faced. The student post-graduate researcher donated considerable time to getting this project off the ground before we were guaranteed a contract, as preliminary samples and data were required before the end of the growing season. As the contract was delayed, we did not accrue all expected expenses in Phase I and we request that the encumbered balances be carried forward to Phase II.

Task 2a. Field Data Collection. Some occupied sites we had hoped to characterize had to bypassed due to access or safety problems. However, we were able to gather and analyze a large number of samples from representative sites to fulfill our contract obligation and to adequately evaluate the habitat in question. Due to delays in finalizing the contract, we were only able to screen the primary restoration site. While this fulfills our contract obligation and meets the objective of our study plan, we may attempt to screen additional sites in Phase II of the project.

We had budgeted for some specialized equipment in Phase I that will be purchased in Phase II with funds moved forward. Preliminary field data collection revealed soil salinity levels to be higher than expected, and some of the soil monitoring equipment we had planned to buy will not function at the observed levels. We have also not found satisfactory hydrologic monitoring equipment for these particular sites. We would therefore like to carry forward unused funds to Phase II so we can purchase appropriate equipment to improve our ability to understand this system, and fulfill our obligations is Phase II.

Task 2b. Laboratory Analyses. There were no problems or delays associated with this task.

Task 2c. Data Analyses. There were no problems or delays associated with this task. Results to date are preliminary and interpretation is projected to be strengthened in Phase II.

III. Projected expenses for each of the next three months in the following quarter to assist in the timing of State bond sales which fund this project.

Month 1 $ 9,379 Month 2 $ 11,341 Month 3 $ 10,555 Total for quarter $ 31,275

QUARTERLY FINANCIAL REPORT

January 1, 2000 – June 30, 2000

Program Manager Spencer Shepherd Phone 415-778-0999 x 24

Project Manager Eliška Rejmánková Phone 530-752-5433 erejmankova@ucdavis.edu
Dept. of Environmental Science & Policy
University of California, Davis
One Shields Avenue
Davis, CA 95616

CALFED Project # 99-N05
Reintroduction of Soft Bird's Beak to Restored Habitat in Suisun Marsh

Quarter Ending June 30, 2000

Note: Per NFWF Program Manager request, this single financial summary table is provided with our July 1, 2000 Quarterly Programmatic Report. The complete set of financial tables and invoice required by the National Fish and Wildlife Foundation and CALFED will be transmitted directly to NFWF under separate cover by the Office of Research, University of California, Davis.

QUARTERLY PROGRAMMATIC REPORT

Program Manager Spencer Shepherd Phone 415-778-0999 x 24
Project Manager Silas Hung Phone: (530) 752-3580
CALFED Project # 99-N07
Quarter Ending July, 10 2000

A. Deliverables

Task Orders	Name of Deliverables	Due Date	% work complete	DateDeliverable Complete
Task 1: Laboratory Setup and experimental protocols	Copy of animal use and care protocol including work plan of experimental design and exposure	April 10, 2000	100%	March 2000
	Standard Operating Procedures (SOP)	Oct 10, 2000	50%	March 2000
	Copy of environmental permits and documentation from CDFG and USFWS	July 10, 2000	100%	June 2000
Task 2: Field evaluation of contaminant exposure (adults and juveniles)	Collect adult and juvenile fish from 3 sites using short gill net sets, beach seines or hook and line	Jan 10, 2001	75%	July 2000
	Provide expertise in field sampling, fish necropsy, and examination	Oct 10, 2000	75%	July 2000
Task 3: Laboratory evaluation of contaminant exposure (adults and juveniles)	Provide growth and chronic effect of contaminant exposure as a function of time before and after exposure	Jan 10, 2001	50%	July 2000
Task 4: Laboratory evaluation of contaminant exposure (embryos)	Provide data on the developmental abnormalities in embryos and larvae	Jan 10, 2001	80%	April 2000
	Provide condition indices to measure adverse health effects of contaminants	Jan 10, 2001	100%	May, 2000

B. Narrative

1. Progress on Specific Tasks:

1A. Drs. Swee Teh and Silas Hung: Task Responsibilities/Progress.

Task 1- Laboratory setup and experimental protocols.
Drs. Teh and Hung have obtained approval for the animal use and care from the University of California at Davis and splittail collecting permits from the Department of Fish and Games (DFG) and United States Fish and Wildlife Services (USFWS). Copies of the approved collecting permits and methods for the animal protocols including work plan and experimental design are detailed in Appendix A (Standard Operating Procedure I-VII).

Task 2- Field evaluation of contaminant exposure (adults and juveniles).
Drs. Teh and Hung have been coordinating with Mr. Randy Baxter (DFG), Mr. Gary Ishikawa (DFG) and Dr. Davis (SFEI) to archive splittail specimens. We have recently conducted three sampling cruises and have collected 60 adult and 90 juvenile splittail. The Fish are currently being process for biochemical and histopathological analysis. Gonads and liver of each fish will be determined for metal burden analysis. Results will be reported in the next quarterly report.

Task 3- Laboratory evaluation of contaminant exposure (adults and juveniles).

For the past seven years, adult male and female splittail have been raised in the Center for Aquatic Biology and Aquaculture at University of California-Davis. Drs. Teh and Hung have successfully spawned and cultured a large number of splittail this year. We have completed two laboratory studies. Details of the work are described in the abstracts below. These abstracts have been submitted to the first CALFED science conference. We have initiated a selenium-laden dietary exposure study. The progress of this study will be reported in the next quarterly report.

ABSTRACT ONE.

Effect of Diets and Water Temperatures on the Growth of Sacramento Splittail (*Pogonichthys macrolepidotus*) Larvae

Deng, D.F., Teh, S.J., Teh, F.C., and Hung, S.O.O.
University of California, Davis.

There is no information on the optimum diet and water temperature of culturing Sacramento Splittail (*Pogonichthys macrolepidotus*) under laboratory conditions. A four-week growth trial using a 4x3x2 factorial design (4 diets, 3 water temperatures, 2 replication of 100 larvae each) was conducted with splittail larvae (16 day post-hatch, 3.1±0.5 mg and 8.9±0.7 mm) in a recirculation system. The four diets were three commercial feeds (BD, BK, SC) plus a laboratory Purified-Casein (PC) diet and the three water temperatures were 18, 22, and 26°C. Specific growth rate, total length, condition factor,

and whole body moisture were significantly ($P<0.05$) affected by the diets and water temperatures, but mortality was only affected by the diets. Interaction of diet and water temperature was significant for the specific growth rate, total length, whole body water, and mortality but not for condition factor. Larvae raised at 26°C grew faster and thus they were longer and heavier than those at 18°C. Larvae fed the BD and SC diets had lower specific growth rate and higher mortality than those fed the BK and PC diets. These results suggested that the commercial BK feed and laboratory PC diet and a water temperature of 22-26°C were optimal for splittail larvae.

ABSTRACT TWO

Sublethal Toxicity of Field Water Samples Contaminated with Esfenvalerate and Diazinon to Sacramento Splittail *(Pogonichthys macrolepidotus)* Larvae

Teh, S.J., Deng, D.F., Werner, I., Teh, F.C., and Hung, S.S.O.
University of California-Davis.

There is a high degree of certainty that Sacramento splittail *(Pogonichthys macrolepidotus)* populations are adversely affected by exposure to contaminants in the environment. However, investigations to detect and quantify chronic sublethal responses in splittail that are attributable to contaminants are lacking. This study evaluated the sublethal effects of splittail larvae (7-day post hatching) exposed to field water samples contaminated with esfenvalerate and diazinon. Four hundred splittail (10 per replicate and four replicates per treatment) were exposed to the field water samples using the United States Environmental Protection Agency standard static renewal method (EPA-600-4-91-002 7/1994) for acute toxicity testing. Exposure duration lasted for 96 hours. After the exposure, mortality was recorded and fish were transferred and raised in clean well water at 18°C for three months. Concentrations of field samples for esfenvalerate and diazinon were verified analytically. At the end of the experiment, cumulative mortality was determined, and individual fish were weighed, measured to determine condition index and processed for biochemical and histopathological analyses. Results from this study will be reported.

Task 4- Laboratory evaluation of contaminant exposure (embryos)
Drs. Teh and Hung have completed preliminary study of embryos bath-exposed to various concentration of selenium. Dr. Teh has also completed evaluation of the developmental effects of embryos exposed to selenium (paper in progress). A full scale embryonic selenium exposure will be initiated in year 2.

1B. Dr. Davis: Task Responsibilities/Progress.
Task 1- Laboratory setup and experimental protocols.

.
Dr. Davis and Mr. Ishikawa have obtained approval for splittail collecting permits from the Department of Fish and Games (DFG) and United States Fish and Wildlife Services (USFWS).

Task 2- Field evaluation of contaminant exposure (adults and juveniles).

Dr. Davis and Mr. Ishikawa have been coordinating with Mr. Randy Baxter (DFG), Drs. Teh and Hung to archive splittail specimens. They have recently conducted three sampling cruises and have collected 60 adult and 90 juvenile splittail.

2. Problems and delays encountered by task.

Recently, we delayed task 3 for a month because one of our large water heaters broke down. It is very important that we are able to maintain a constant water temperature during our dietary exposure. Hence, we have converted some of the supplies money to purchase the $4000.00 equipment.

3. Other issues or comments.

Due to various delays in the contractual process, we would like to thank Mr. Spenser for exempting us from submitting the first quarterly progress report. We also would like to thank DFG and USFWS for approving our collecting permits.

4. Projected expenses for each of the next three months in the following quarter.

Month 1 $ 23,489 Month 2 $ 15,472 Month 3 $ 15,472 Total for quarter $ 54,433

QUARTERLY PROGRAMMATIC REPORT

Program Manager Spencer Shepherd Phone 415-778-0999 x 24
Project Manager Deborah Rudnick
CALFED Project # 99-N10
Quarter Ending July 10, 2000

Deliverables

	Name of Deliverable	**Due Date**	**% Work Complete**	**Date Deliverable complete**
	TO3 Quarterly Report	July 10, 2000	~60%	June 28, 2000

Task 3

Subtask 1 Collection of crabs, morphological data collection and Gut content analysis
Subtask 2 Benthic field sample collection
Subtask 3 Laboratory Feeding Preference Experiments
Subtask 4 Analysis of data and report preparation

Narrative

Description of activities performed during the quarter, by task.

Subtask 1: Collection of crabs for gut content analysis

Over 100 crabs were collected from three South Bay sites (Coyote Creek, Stevens Creek, Guadalupe River), using hand collection methods, during September of 1999. Crabs were immediately placed on ice in the field and put in the freezer upon return to the laboratory. Eighty crabs were additionally collected from the Tracy Fish Collection Facility in the fall of 1999 by Facility employees and immediately frozen. Crabs were picked up at the Facility and stored at Berkeley for gut content analyis (GCA). Additionally, a small number (approximately 10) adult crabs were collected from otter trawls in the open waters of the Bay to examine whether adult crabs are feeding during reproduction.

All crabs from South Bay sites have been weighed, sexed, measured and have been dissected for GCA. At this time, Tracy facility crabs are still awaiting morphological data collection and gut content analysis. Gut contents were quantified by assigning a stomach content fullness value based on an index of 1 to 4 (1 = 0-25% fullness, etc.). Gut contents were additionally quantified by assigning percentages to major categories of ingested items by spreading contents over a gridded petri dish and quantifying number of squares covered by various food types.

Subtask 2: Benthic field sample collection

We quantified major physical, chemical and biological parameters for each South Bay site at which collections were made (including temperature, major plant community, sediment type, etc). Three samples of benthic macroinvertebrates were collected at each collection sites using Surber or Kicknet

samplers in order to identify dominant invertebrate taxa that could be used as prey by mitten crabs. Detritus captured in kicknet samples was also identified as to major plant type composition.

Subtask 3: Laboratory Feeding Preference Experiments

We collected 18 crabs from the field (simultaneously with crabs collected for gut content analysis) and brought them back to aquaria at Berkeley. The crabs were starved for 3 days and then used in a series of feeding preference experiments. Crabs were given a choice of four food types (benthic macroinvertebrates, algae, detritus and ghost shrimp) and these foods were weighed prior to and after each experiment. Over forty 24-hour feeding experiments were run, and included several control runs in which food was placed in tanks for 24-hours in order to monitor autogenic changes.

Subtask 4: Analysis and reporting of data

Gut content analysis data of South Bay crabs have been analyzed using multivariate statistics to examine contributions of major food types to diet. Gut contents have been regressed against morphological data to examine relationships between diet and size and sex of crabs. Analysis of GCA data for Tracy facility crabs will be completed after all GCA for these crabs has been completed. Feeding experiments have been concluded and dietary intake has been quantified for these experiments. Results of these two major research efforts indicate that while gut content analysis indicates that crabs in the field are consuming mostly algae and detritus, crabs in feeding experiments showed a preference for benthic macroinvertebrates.

At this time we have completed a large amount of the work under this task order. We still need to process the Tracy Facility Crabs. In addition, because limitations of feeding preference experiments (see next section) we will run additional feeding experiments (see below). We expect to conclude these experiments by the end of September and have a final report for this Task Order by the end of October.

To date, two major publications have been created based on this research: 1) a poster presented at the May 2000 meeting of the North American Benthological Society in Keystone, Colorado, "The ecology and trophic dynamics of the invasive Chinese mitten crab (*Eriocheir sinensis*)" by Leah A. Rogers, Deborah A. Rudnick and Vincent H. Resh, and 2) a senior thesis prepared by Leah A. Rogers, an undergraduate assistant in this Task Order, "The Feeding Ecology of the Invasive Chinese Mitten Crab, *Eriocheir sinensis*: Implications for California's Freshwater Communities." Both these publications were based on a combination of work done prior to our work on this CALFED grant and work defined by this Task Order. Support from CALFED was acknowledged in both publications. The text for the poster and the senior thesis are included as attachments to this report.

Problems and delays encountered by task:

Initially we intended to include crabs from North Bay tributaries in our GCA. However, efforts to collect crabs from these streams were unsuccessful, either because crabs were not sufficiently abundant or sampling efforts were not adequate to collect crabs. We therefore did not include North Bay crabs in our analysis. Instead, we increased the number of crabs collected from the Tracy Facility to get a greater representation of Delta crabs, and added crabs from the open waters of the South Bay to examine adult feeding behavior.

During feeding analysis, one female died during the first feeding trial; the three trials for that crab were therefore removed from the experimental design and analysis. Feeding trials were challenging because several combinations of substrate and filtering arrangements were tested before we found a design that did not remove food through the filter or trap food in the substrate, making it difficult to retrieve for weighing. We will conduct a series of pool experiments in late summer-early fall 2000 that will provide additional feeding preference data in a more natural setting. An addendum to the Task Order will be submitted shortly to explain this proposed research.

Other issues or comments:

Please note that the final contract for this grant has only recently been finalized, allowing the assignment of fund numbers to the task orders only within the last few weeks. At this time, therefore, we have not quantified or submitted expenses to our administration or to CALFED for work completed under this task order. Expenses for this task order, therefore, are best estimates, not calculated amounts, and should be treated as such. This task order was signed at the end of May, 2000, necessitating a delay of some research and assignment of financial resources. Therefore, we have moved the expected closure date forward for this task order and its associated final report. We will additionally include an addendum to the Task Order to reflect this change.

Please identify your projected expenses for each of the next three months in the following quarter to assist in the timing of State bond sales which fund this project:

July 2000 $ 2500
August 2000 $1500
September 2000 $1500
Total for quarter $ 5500

SUMMARY FOR TASK 3: Chinese mitten crab dietary preferences and food web impacts

July 10 Quarterly Report

Line Items	Estimated Costs to Date	Budgeted Amount in Task Order	Balance Available (B-C)
Direct Salary and Benefits	$18000	$28704	$11704
Supplies and Equipment	$425	$925	$500
Travel Costs	$800	$969	$169
Task 1 Sub-Total	$19225	$30598	$12373
<Less 10%>	**(**$1922)		
TASK TOTAL	$17303		

QUARTERLY PROGRAMMATIC REPORT

Program Manager Spencer Shepherd Phone 415-778-0999 x 24
Project Manager Carri Benefield
CALFED Project # 99-N11
Quarter Ending July 1, 2000

Deliverables

	Name of Deliverable	Due Date	% Work Complete	Date Deliverable complete
Task 15	Education Outreach	Continuous throughout Project	90%	ongoing…
Task 16	Training of Professionals	Continuous throughout Project	70%	ongoing…
Task 17	GPS of existing sites	January each year	45%	January 2003
Task 18	Butte, Shasta, Upper River Survey	January 2000-2003	40%	January 2003
Task 19	Update GIS	January 2000-2003	70%	January 2003
Task 20	Assessment	April 2001, 2002	0%	April 2002
Task 21	Produce Adaptive Mgt plan	April 2001, 2002	0%	April 2002 (plan revised)
Task 22	Environmental consultation and planning	Following assessment meetings	30%	April or July 2002
Task 23	Implement Controls	Fall/Jan. 2001, 2002, 2003	5%	January 2003
Task 24	Monitor loosestrife density/control success	January 2001,2002	0%	January 2003
Task 25	Monitor water	Summer 2001, 2002	0%	Summer 2002

Narrative

Description of activities performed during the quarter, by task:

Education Outreach (TASK 15)

A professional and colorful brochure was designed to highlight the impacts, prevention, control, and spread of purple loosestrife in California. The brochure was designed in Adobe PageMaker and then contracted out for final printing. The brochure is being distributed to educate agency personnel, private citizens, and recreational users. Brochures are being widely distributed via presentations and training sessions and through display at Agricultural Commissioner's Offices, Agency offices, RCD offices, nurseries, and U.C. Extension Offices, amongst others.

Deliverables: Copy of the final Educational Brochure

Educational outreach continues to encompass educational talks and poster presentations to a variety of audiences. In addition several new educational materials have been developed. (1) Purple Loosestrife Website (www.cdfa.ca.gov/purpleloosestrife), (2) Purple Loosestrife stickers for field crews to put on field notebooks as a survey reminder and identification overview, (3) Purple Loosestrife mailer, informational flier that can be included in local/regional energy and water bills.

Deliverables: Copy of website, Copy of stickers, Copy of mailer

To date, thirty presentations have been given at the following meetings/conferences/events, five talks this quarter:

Fresno County Ag Department
California Fish and Game, Delta crew
Department of Water Resources White Slough managers
Kern County Ag Department
Kern County Audubon Preserve

Deliverables: Where available, announcements/abstracts from presentations are enclosed. Copies of most presentation materials were submitted with first quarterly report, (January 2000) ***NEW presentation deliverables*** are included with this report.

Training of Professionals (TASK 16)

Training of professionals has and will continue to entail a focused education/training with professionals working in throughout the watershed. Training activities include: slide presentation, hands on demonstrations/examples of flora, and field demonstrations/site visits.

The following groups were trained this quarter:

Fresno County Ag Department
California Fish and Game, Delta crew
Department of Water Resources White Slough managers
Kern County Audubon Preserve
Training sessions will continue through the summer and into the fall

Deliverables: Training announcements are included with this report

GPS/Survey (TASKS 17-18)

Delta-wide Loosestrife Survey, *surveys conducted to date*

Northern Delta, Bear River Drainage: The first week in June was spent surveying the Northern Delta (Bear River Drainage) for purple loosestrife. No infestations were found. We cooperated with the County and CDFA District Biologists. . Maps will be included with future quarterly reports.

Northern Delta, White Slough: The third week in June was spent conducting survey and delimitation in White Slough in the Northern Delta. We determined the boundaries of the infestation. We cooperated with Fish and Game, Dept. of Water Resources, and local growers bordering the slough. Maps will be

included with future quarterly reports.

Contiguous Basin Survey, *Areas surveyed to date:*

Fresno: June 12-14th were spent in *Fresno County* conducting truck and foot surveys in and around Fresno and Sanger. The source of the infestation was determined and the extend of the infestation was assessed. The County will conduct follow-up surveys in July along the Kings River. We cooperated with the County Ag Dept., CDFA district Biologists, and private landowners in the area. A Map will be included with future quarterly reports.

Kern: two days were spent in Kern County assessing a population near Lake Isabella, in Onyx. We meet with both County Ag Dept. biologists and the Kern River Audubon Preserve Manager. Samples and GPS data were taken. Maps will be included with future quarterly reports.

Sutter/Yuba Counties: The week of June 26th was spent conducting surveys along the Feather River, which is split between Sutter and Yuba Counties. Populations were mapped/assessed and treated by the County. We cooperated with the County Ag Dept. and CDFA District Biologists. Maps will be included with future quarterly reports.

Mapping (TASK 19)

Map Existing Infestation Sites

Infestations in Fresno, Kern, Yuba/Sutter, and San Joaquin Counties were mapped using a GeoExplorer GPS unit**.** Mapping will be an ongoing task throughout the course of the project. Quarterly reports will be accompanied by updated maps, when appropriate.

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Problems and delays encountered by task. NONE

Other issues or comments. NONE

Please identify your projected expenses for each of the next three months in the following quarter to assist in the timing of State bond sales which fund this project.

Month 1 $ 2,000 Month 2 $ 2,000 Month 3 $ 2,100 Total for quarter $ 6,100

NFWF Quarterly Fiscal Report-July 2000

Title: Purple Loosestrife Prevention, Detection, and Control Actions for the Sacramento-San Joaquin River Delta System and Associated Hydrological Units

Budget year: 2000

Applicant:California Department of Food and Agriculture, Integrated Pest Control Branch

Statement Quarter: 3

CALFED Project Number: 99-N11

Total Project Estimated Completion Date: Jan. 2003 — 3 years

	(Quarterly Budget)				(FY '00 Budget)				(Three Year Budget)		
	Budget	Accrued Expenditure	Variance	**	Budget	Accrued Expenditure	Remaining Balance	**	Budget	Accrued Expenditures	Balance to Complete	**
Task 15: Education Outreach	$0	$0	$0		$7,166	$7,166	$0		$7,166	$7,166	$0	
Schedule: FY '99 through FY '02												
Percent Work Complete for Task 15: 80%												
Task 16: Training of Professionals	$0	$0	$0		$2,214	$2,214	$0		$2,214	$2,214	$0	
Schedule: FY '99 through FY '02												
Percent Work Complete for Task 16: 60%												
Task 17: GPS Existing Sites	$600	$600	$0		$8,500	$7,888	$612		$11,776	$7,888	$3,888	
Schedule: FY '99 through FY '02												
Percent Work Complete for Task 17: 35%												
Task 18: Butte, Shasta, Upper River Survey	$1,000	$1,000	$0		$18,021	$15,509	$2,512		$26,829	$15,509	$11,319.86	
Schedule: FY '99 through FY '02												
Percent Work Complete for Task 18: 20%												
Task 19:Update GIS	$0	$0	$0		$2,000	$1,827	$173		$2,800	$1,827	$972.86	
Schedule: FY '99 through FY '02												
Percent Work Complete for Task 19: 70%												
Task 20: Assessment	$0	$0	$0		$0	$0	$0		$2,088	$0	$2,087.53	
Schedule: FY '99 through FY '02												
Percent Work Complete for Task 20: 0%												
Task 21: Produce Adaptive Management Plan	$0	$0	$0		$0	$0	$0		$2,132	$0	$2,132.28	
Schedule: FY '99 through FY '02												
Percent Work Complete for Task 21: 0%												
Task 22: Environmental consultation and planning	$0	$0	$0		$1,800	$1,800	$0		$3,559	$1,800	$1,758.74	
Schedule: FY '99 through FY '02												
Percent Work Complete for Task 22: 30%												
Task 23: Implement Controls	$3,000	$3,000	$0		$8,000	$5,000	$3,000		$26,912	$5,000	$21,912.35	
Schedule: FY '99 through FY '02												
Percent Work Complete for Task 23: 5%												
Task 24: Monitor loosestrife density/control success	$1,500	$1,500	$0		$4,000	$2,500	$1,500		$17,025	$2,500	$14,524.77	
Schedule: FY '99 through FY '02												
Percent Work Complete for Task 24: 0%												
Task 25: Monitor water	$0	$0	$0		$0	$0	$0		$24,972	$0	$24,971.83	
Schedule: FY '99 through FY '02												
Percent Work Complete for Task 25: 0%												
Phase I Total:	**$6,100**	**$6,100**	**$0**		**$51,702**	**$43,905**	**$7,797**		**$127,473**	**$43,905**	**$83,568**	